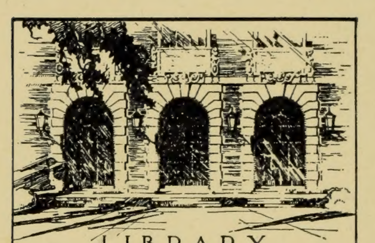

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OF THE
PRESIDENT OF THE UNIVERSITY

1916-1917

DECEMBER, 1917

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2. Circular of Information. August.
3. Announcement of the School of Education. July.
4. Rules and Regulations, University Farm School. September.
5. Catalogue of Officers and Students. September.
6. Rules of the Editorial Committee. October.
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10. Suggestions on the Preparation of Manuscript. January.
11. Catalogue of Officers and Students. February.

UNIVERSITY OF CALIFORNIA

Annual Report of the President of the University on behalf of the Regents to His Excellency the Governor of the State of California

1916-1917

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REPORT OF THE PRESIDENT OF THE UNIVERSITY

University of California,
Berkeley, December 15, 1917.

To His Excellency William Dennison Stephens,
Governor of the State of California.

Sir: I have the honor of submitting herewith my annual report on the condition of the University. The first question that naturally arises is: What has been the effect of the war upon the University and what relation has the University borne to the war? First, as to the effect of the war upon the University, one direct result has been a decrease of about 10 per cent in the University's enrollment. The percentage of men students enrolled in the University has, of course, considerably decreased because of the war. Whereas the men constituted 56 per cent of the undergraduate student body (that is, 2881 out of a total of 5140) on November 1, 1916, on November 1, 1917, they constituted less than 46.3 per cent (2137 out of a net total of 4621). This has brought the net total of *undergraduate* students in the University from 5140 on November 1, 1916, to 4621 on November 1, 1917. Since that date several hundred men have left to enter the nation's service. It is interesting to note, however, that among the undergraduate women there has been an increase from 2259 on November 1, 1916, to 2484 on November 1, 1917. In the Graduate Division, on November 1, 1916, the men constituted 50.5 per cent, or 456 out of a total of 902; whereas on November 1, 1917, they constituted only 42.8 per cent, or 302 out of a total of 705. The women's enrollment in the Graduate Division decreased from 446 to 403 in the period named, although they now form a large proportion of the total graduate students.

Enrollment

Effect of the War

The effect of the war upon the University enrollment is shown more strikingly in Table 6B of the Recorder's statistics, on page 353 of this report. The increase in the number of women registered in all classes is one noteworthy fact. The bulk of the increase in women's enrollment is in the Colleges of Letters and Science and Commerce. There is also a slight increase of women in Agriculture. The only college consisting chiefly of men which shows an increase from November 1, 1916, to November 1, 1917, is the College of Chemistry, which had in 1916, 124, and in 1917, 125 students enrolled. The figures for November, 1916 and 1917, show among the men an increase in the junior enrollment in commerce, the sophomore enrollment in civil engineering, and the freshmen enrollment in mechanics, whereas in all other colleges except chemistry there is a decrease in the enrollment among the men. Distributed among the colleges this great decrease in men's enrollment is represented as follows:

Increase of Men Only in Chemistry

Decrease in Men's Colleges

	November, 1916	November, 1917
Letters and Science	1,362	1,031
Commerce	318	236
Agriculture	484	312
Mechanics	302	213
Mining	113	90
Civil Engineering	163	105

Chemistry alone increases from 124 to 125.

Among other notable facts is the falling off in graduate students, particularly in Letters and Science.

Enrollment for Last Year

At the close of last term, that is, in May, 1917, the effect of the war upon enrollment was already being felt, particularly among the men. There were 591 "emergency withdrawals." This form of withdrawal was provided by special action of the Academic Senate whereby those men who were called to active military service before the end of the term, and whose records were satisfactory, could secure credit for their courses. On the whole, however, the figures from July 1, 1916, to June 30, 1917, indicate the state of University enrollment before the effects of the war became pronounced. They show that last year witnessed a considerable increase in the enrollment of the regular session, but a decrease of about 800 in the total enrollment because of a falling off in the number of persons attending the Summer Session. This is only natural, as the attendance of the Summer Session in 1915 was abnormally large because of the Exposition.

Statistics for 1916-17

The number of different persons enrolled as students in some one of the schools or colleges maintained by the University reached for the year July 1, 1916, to June 30, 1917, a total of 11,855 as against a total of 12,226 for the year 1915–16. In this figure for the year 1916–17 are included undergraduates in the colleges at Berkeley, 5774; graduate students in the colleges at Berkeley, 1092; the students in the professional schools in San Francisco (Medicine, third and fourth years, 53; Dentistry, 175; Law, 99; Pharmacy, 92; Art, 356; total, 775). In other outlying departments, Lick Observatory, Riverside, Scripps Institution, and the Wilmerding School, 489; students at the Farm School at Davis, 314; students enrolled in short courses in agriculture, 250; and finally the enrollment of the Summer Session after the deduction of students also in attendance during the fall session, 3161. In these figures have not been included the courses in University Extension. These would add the following: recipients of regular class instruction maintained by the Division of University Extension, 3329, as compared with 3013 in 1915–16; recipients of instruction in agriculture through the correspondence courses of the Department of Agriculture, 8,791, as compared with 10,595 in 1915–16; recipients of instruction by correspondence in subjects other than agriculture, 5745, as compared with 2214 in 1915–16; gross total of those attending lectures maintained by the Division of University Extension, 79,760, as compared with 63,900 in 1915–16; gross total of those enrolled under the Bureau of Public Discussion, 30,000, as compared with 45,000 in 1915–16;* gross total of those met and instructed or advised by County Advisors in Agriculture, 6000, as compared with 9450 in 1915–16. To these might be added the number of persons reached by various lectures given by University professors, but not organized under the University departments, and many special courses connected with the war, the enrollment in which runs up into the thousands.

Extension Figures

---

* The number reached through Visual Instruction is estimated as not less than 600,000; this cannot, however, be quoted as a comparable figure.

The University Reaches More Persons Than Ever

Thus, with the expansion of our agricultural and extension work throughout the state, it is obvious that the University has, during the past year, reached through its educational agencies an ever increasing number of persons, and in estimating the number reached by the University in the future we must bear in mind the plans for expansion of University Extension work, and the establishment of extension centers throughout southern California as well as the plans for a Summer Session in Los Angeles. We must also reckon with the amplification of the Farm Advisor system that has already taken place through the aid given by the Federal Government with its appropriation of $129,500 and the extra $30,000 devoted by the state to the expansion of this system. Altogether this will add from ten to thirty thousand persons to the number of those to whom the University ministers, and it will bring the gross total of those affected in one way or another by the University to something approaching three hundred thousand people.

300,000 Directly Affected by the University

Dealing still with the registration figures for the period from July 1, 1916, to June 30, 1917, there are a number of significant facts that present themselves.

Statistics as to enrollment before the effect of the war became particularly apparent give indication as to the normal growth of the University. A comparison of the figures for 1915–16 and 1916–17, shows a falling off in the total number of graduate and undergraduate students in Agriculture at Berkeley. In 1915–16 there were 565 undergraduates as against 546 the following year. However, the first figure represented 9.47 per cent of the total undergraduate enrollment, while agriculture for 1916–17 had 10.39 per cent of the total undergraduate enrollment. There were 55 graduate students in agriculture in 1915–16 as against 46 for 1916–17. Dean Hunt's report comments upon these figures, and makes it clear that the falling off has been among city-bred students of agriculture and that the number of country-bred students has not decreased. He points out that although in the College of Agriculture proper the enrollment has decreased somewhat; that

Slight Falling Off in Agriculture at Berkeley

is, from a total of 637, including graduates, in 1915–16, to 623 in 1916–17, and while the enrollment at the Farm School for both years has been exactly 319, in the short courses there has been an increase from 181 to 250, due largely to the introduction of the new tractor course with an enrollment of 57. This makes the grand total in agriculture for 1915–16, 1132, and for 1916–17, 1187. Agriculture appears to be holding its own among the colleges of the University but seems to have passed its period of rapid student increase. Reviewing the undergraduate figures, for instance, we find that in 1907–08 there were 132 undergraduates, or 5.05 per cent; in 1911–12, 372, or 10.33 per cent; whereas, in the year just passed, we had 546 or 10.39 per cent.

Total Agriculture Enrollment Increased

Part of the University in the War

On February 13, 1917, in view of the increasing probability of the United States entering the European war, the Board of Regents, at the instance of the President of the University, formally offered to the National Government the entire resources of the University for use in meeting whatever needs should arise in prosecuting the war. A complete survey of the available resources of the University was made and transmitted to the Governor for the State Council of Defense. The Alumni Association of the University carried on a survey of the personnel of the alumni and faculty with a view to determining the availability of graduates, faculty, and former students for various types of national service. Seven thousand questionnaires were sent out by the association, and soon after war was declared the Military Information Office, affiliated with the Alumni Association, had in its hands records as to the qualifications of 3075 persons available for the service of the nation in military, technical and other capacities. Professor Leon J. Richardson, appointed by the President of the University as Director of the Military Information Office, has, since the outbreak of the war, carried on the activities of the office most effectively. Several thousand persons have received advice from this bureau. Over one hundred specific calls for recommendations have come from the Government; many persons have been placed, some in positions of considerable responsibility and importance. Four

The Military Information Office

hundred and fifteen persons have been formally recommended for various forms of service with documentary credentials prepared in the Military Information Office. Among other things, the office has recruited three ambulance units, has compiled the honor roll or directory of faculty, students, and alumni in the service, and has had charge of the examination of applicants for the University's quota to the Third Officers' Training Camp. The records of this office show that over two thousand officers, alumni, and students of the University whose addresses are definitely known have entered some branch of the military or naval forces of the nation. When men were needed for the first officers' camps the University responded with hundreds of applications. There were 87 alumni, former students, and officers of the University in the first R. O. T. C. at the Presidio; 90 in the second. The University had the privilege of recommending 42 men for the third camp, and it had over three times this number of applications. Besides the American Field Ambulance Corps which went to France from the University of California before the United States had entered the European war, the University has furnished at the request of the War Department three ambulance corps containing a total of 200 carefully selected men. The President of the University was accorded the privilege of naming for commissions as Second Lieutenants in the Marine Corps, subject only to physical examination, 23 graduates of the University. Ten "honor graduates" of the Department of Military Science and Tactics were last year commissioned as Second Lieutenants in the regular army. That the men of the University have in large numbers answered the call of the nation to arms is shown by the decrease, from November 1, 1916, to November 1, 1917, of 917 in the men's enrollment. In May, 1917, 591 students were granted the emergency withdrawal privilege of securing credit in their courses because of their entry into the national service, and this term applications for emergency withdrawals have already been made by 322 students. This is an inadequate figure, as the men are going every day, and by the end of this term it is highly probable that over 500 men of

Over 2000 in the Service

University Men in Training Camps

Decrease in Men's Enrollment

the University will have left this term to enter the service of the nation.

Summary of Men in the Service

Director Richardson of the Military Information Office has made an interesting estimate as to the distribution of the 2000 or more students, alumni and faculty in different branches of the service. The figures follow:

Army, all branches except Aviation	79%
Navy	2%
(The reason for the small percentage in the Navy is that the Navy was practically organized when the war started and few facilities have been given the University to recruit men for the Navy.)	
Aviation	5%
Ambulance and Base Hospital Units	12%
Marines	2%

Faculty in the Service

Throughout practically every department the University has given freely the services of its ablest men, either by enlistment or by work at home. The ranks of the faculty of the University have been rather severely depleted through the entrance of many members of the staff into the national service. The University has lost much in giving to the service of the nation such men as Colonel J. T. Nance, Major David P. Barrows, Major H. C. Moffitt, Major Gilbert N. Lewis, Captain G. M. Stratton, Captain J. H. Hildebrand, Professor Lincoln Hutchinson, with the War Trade Board, and over fifty other members of the faculty who have left the University for the period of the war. The Comptroller, Mr. Ralph P. Merritt, is Food Administrator for California. He was also Director of the Selective Draft in California. That giving these men is a distinct contribution to the nation's cause no one will doubt.

In many ways the University has devoted itself wholeheartedly to the task of aiding the nation in the present crisis. Faculty and students have participated enthusiastically in the various national service campaigns, notably those for the Liberty Loans, the Red Cross, and the Y. M. C. A. Members of the faculty have given their services in addressing patriotic gatherings and in speaking on the purposes of the war. In certain respects the curriculum of the University has been modified in order to meet the war needs of the country. New courses to meet specific emergencies have been added. In accordance with the President's offer of February 13, the equipment of the University and the services of its technical and scientific experts have been freely utilized by the government in carrying on war-time work and solving war-time problems.

Co-operation With State Council of Defense

The State Council of Defense was organized on April 6, 1917, with the President of the University as Chairman of the Committee on Resources and Food Supply, and the Dean of the Faculties, Dr. David P. Barrows, as Chairman of the Committee on Scientific Research. Since the entrance of Dr. Barrows into the military forces of the United States as Major of Cavalry in the National Army detailed for special service as Intelligence Officer in the Philippines, Dr. J. C. Merriam, of the Department of Palaeontology of the University, has acted in his stead. The Committee on Resources and Food Supply, as soon as appointed, immediately laid its plans for a thorough-going survey of the food resources of the state. Under the direction of Dean Hunt and the staff of the College of Agriculture of the University and through the agency of the farm advisor system in the counties which had farm advisors and an organization patterned upon the farm advisor system in those which had not, the entire staff of the College of Agriculture devoted itself to the prosecution of this food survey.

Food Survey by College of Agriculture

The Committee on Resources and Food Supply consisted of the following besides the President of the University: John A. O'Connell, C. H. Bentley, B. B. Meek, and Miss Ethel Moore, with Dean Thomas F. Hunt in an advisory relation. A conference was called by this committee for April 10, at the University, with leading men of the state, representatives of agriculture and agricultural industries, in attendance. On April 16, at the request of the Secretary of Agriculture, a conference was held at the University of representatives of Land Grant Colleges in Arizona, Idaho, Nevada, Oregon, Utah, and Washington, officials of the United States Department of Agriculture, and members of the faculty of the

State Conference on Agriculture, April 10

Western States Conference, April 16

University of California College of Agriculture. Between April 16 and 28 an agricultural survey of the entire state was conducted, with public hearings in 55 counties. The results of this agricultural enquiry were printed and distributed and specific advice given to each section of California as to existing conditions and as to needs developed by the war. By great and unremitting activity on the part of the agricultural faculty, the Farm Advisors, and various co-operating agencies, through the co-operation of the newspapers and the agricultural periodicals of California, and through the circulation of from 5000 to 40,000 each of some 39 special publications of the University of California College of Agriculture, the co-operation was enlisted of the farmers of the state in increasing the production of food in California and in meeting the chief need of the day—the production of a greater quantity of animal products and of food for livestock. Through the aid of an advisory subcommittee of women, the co-operation was obtained of the women of the state for the food conservation movement. Through co-operation with the State Board of Education, a Students' Working Reserve was organized to aid in making available the services of students in the high schools of the state, for the harvesting of crops or other agricultural emergency. By co-operation with the United States Department of Agriculture and the United States Department of Labor, a Director of the Boys' Working Reserve was appointed, to aid in increasing the supply of high school labor available. Another member of the agricultural faculty, Professor R. L. Adams, in co-operation with the United States Department of Agriculture, was designated as State Farm Labor Agent. Under his direction a state-wide organization was effected through the appointment in most of the counties of California of a county labor agent, representing the County Council of Defense, the Farm Labor Agent serving as a clearing house for information in regard to the demand and supply of farm labor.

Agricultural Survey of California, April 16-28

Women's Committee, and Students' Working Reserve

The Farm Labor Question

The Emergency Food Production Act, adopted by Congress, provides an additional $104,000 per annum for farm advisor and

Federal Aid to Extend Farm Advisor System

food demonstration work in California and for allied activities. At a conference called in Sacramento by the State Council of Defense, at which were present the presidents of the Farm Bureaus and the presidents of the Boards of Supervisors from counties throughout the state, steps were taken for extending the farm advisor system, already in force in some 20 California counties, to practically all the primarily agricultural counties of California. Furthermore, the state has been divided into eight districts, and a resident woman demonstrator, trained in home economics, assigned to each, these demonstrators to devote their time primarily to teaching women how to develop gardens, rear poultry, can and preserve fruits and vegetables, and promote food conservation through changes in the family dietary.

Comptroller Merritt as Food Administrator

Upon the appointment of Mr Herbert C. Hoover as National Food Administrator, Mr. Ralph P. Merritt, Comptroller of the University, took up the task of Federal Food Administrator for California. The President of the University and Dean Hunt are members of the general advisory committee for this great undertaking, and Dean Hunt is the chairman of the Food Production Board, which is a part of the Food Administration's organization in California.

Pacific Ocean Food Survey by Scripps Institution

The Scripps Institution for Biological Research under Director W. E. Ritter is carrying on a food survey of its own in the form of an investigation of the sea food possibilities of the Pacific Ocean.

Scientific Activities to Aid in the War

Practically every department of the University has in one way or in another aided in the war work of the nation. The scientific departments particularly have been active. A complete list cannot here be given, partly because of its length and partly because many of the researches now being conducted at the request of the War Department are confidential in their nature. The following, however, is a list of some of the things done by members of the faculty not mentioned elsewhere. They can merely be enumerated.

Professor W. B. Herms, Department of Entomology. Survey of sanitary conditions in cantonments of Western Department.

Director W. W. Campbell, Lick Observatory: Confidential researches assigned to the Lick Observatory staff by the National Research Council.

Professors H. M. Hall and T. H. Goodspeed, Department of Botany: Three important investigations; one of them the investigation of West American Rubber Plants.

Practically all of the members of the Department of Chemistry are engaged in government researches. During the absence of Professor Lewis, Professor O'Neill is acting head of the department.

Professor S. Daggett, of the Department of Economics, has made a report on the supply of iron and steel on the Pacific Coast.

Professor H. R. Hatfield, Department of Economics, has prepared a report on the relation of the State Banks to the Federal Reserve System.

Professor F. E. Pernot, Department of Electrical Engineering, has carried on important work on problems regarding which he is now conferring with the staff of the Chief Signal Officer at Washington.

Professor C. G. Hyde, Department of Civil Engineering, has made designs for fifteen miles of sewer system for Camp Fremont.

Under the direction of Professor C. C. Wiskocil, of the Civil Engineering Department, the laboratories of that department have made tests on airplane fastenings and woods to be used in the construction of airplanes.

Professor C. L. Cory, of the Department of Mechanical Engineering, has carried on investigations on the fixation of nitrogen from the air by direct electric arc furnace process.

Professor G. D. Louderback, of the Department of Geology, has reported on the sources of supply of manganese ore.

Dr. G. H. Whipple, Dr. Hooper, and Dr. Meyer, together with other members of the staff of the George William Hooper Foundation for Medical Research, have carried on important investigations, among which are studies of anemia resulting from loss of blood, and studies dealing with various conditions favoring acute shock.

Professor F. P. Gay has carried on investigations on typhoid and tuberculosis, often reported before.

Professor G. M. Stratton and Professor Warner Brown, of the Department of Psychology, have conducted tests to determine the fitness of military aviators.

Under Professor C. A. Kofoid, of the Department of Zoology, study has been made of the hookworm, and the discovery and extermination of organisms causing trench dysentery.

War Work of the Medical School

The Medical School has given many of its men to the Medical Corps; it has conducted many tests and physical examinations; it has dealt with research problems; it has been accorded the privilege of enlisting second, third, and fourth year students in the Medical Enlisted Reserve with orders to continue their studies. The Medical School has furnished the equipment and many of the members of Hospital Unit 30, under Dr. Kilgore. Of the 25 physicians, 23 are from our Medical School, 13 of them graduates. There are also 10 enlisted men among our medical students. Eight of the 65 nurses are from the University Hospital. The University Hospital is training stewards of base hospitals in units of 50 men each. The Dispensary has, since July 1, conducted 2200 examinations for government service. In addition, many other examinations have been conducted for the State Board of Health, in connection with the selective draft. Notable among the achievements in medicine in the past year is the discovery of tethelin by Professor T. Brailsford Robertson. Experimentation in Europe already shows that the power of this substance to promote the growth of tissue will prove of immense value in the work of treating wounds.

Dental School Gives Aid to War Department

The Dental School has aided the War Department in many ways, notably by supplying trained men for the work of the Dental Corps and by offering under its clinic to perform free dental services for all men who because of defects of teeth might be rejected under the draft.

Red Cross Work

An important phase of the University's work has been in connection with Red Cross activities. Dr. W. P. Lucas, Professor of Pediatrics in the Medical School, has been granted a Sabbatical leave of absence in order to supervise the relief work among children of Belgium and northern France. So valuable did Dr. Lucas prove to be in this capacity that upon the urgent request of the Red Cross authorities he has been allowed six months more in which to continue his beneficent efforts. Miss Maude Cleveland, Director of the Women's Gymnasium, was given Sabbatical leave during the fall semester to engage in Red Cross work in France, and has just been given additional leave to continue this work. On the campus of the University the women are actively engaged in the various types of work being done by the Red Cross Society. Under the leadership of Dr. Jessica B. Peixotto, an institute for home service was held in connection with the Red Cross from November 12 to December 15.

Numbers of new courses have been instituted in order to utilize the University's machinery in turning out specially trained men to perform valuable and necessary services in the military or naval forces. Foremost among these is the School of Military Aeronautics. This school, which has an attendance of about 500 flying cadets, a correspondingly large budget and payroll, and which has involved a material advance of funds to the federal government by the Regents—later to be met from the fees paid by the government—is one of eight preliminary schools for ground school training of aerial officers of the Aviation Section of the Signal Corps. The course of instruction was outlined by the War Department and is being supervised by Dr. B. M. Woods, of the Department of Mechanics, who holds the position of President of the Academic Board of the School. Major George B. Hunter, of the U. S. Army, has been detailed by the War Department as Commandant. The initial enrollment was 25 students a week, and it has been increased until the University is now receiving over 60 students a week.

The School of Military Aeronautics

Curriculum of the School of Military Aeronautics

The course, which is followed by training in actual flying in another school elsewhere, is eight weeks in length. The curriculum includes work in wireless telegraphy, in gunnery, in elementary aeronautics, in engines, principles of cross-country flying, in maps, reconnaissance, and in military studies and procedure. The University receives a tuition fee from the United States Government for each student sent to the school and furnishes instructors and general equipment in return.

For this school the University has provided drill ground and classroom space on the campus and has constructed temporary buildings for laboratories and classroom instruction at a total cost of $16,000. The government has leased a building just outside the campus for barracks and the University has erected another temporary frame building for use as barracks at a cost of $17,500.

Courses in Navigation On September 11 the University inaugurated under the general supervision of Dean A. O. Leuschner, and in the charge of Dr. Neubauer and Captain George Harding, two University Extension courses in Navigation and Nautical Astronomy conducted in the Ferry Building, San Francisco. Thirty-nine students took the first course. Twenty-two successfully completed it, fifteen with the highest record possible. Ten other extension students completed the course, by courtesy of the Shipping Board, in one of the government classes. These 32 students who have successfully passed the course are being placed with appointments as Cadet Officers on the vessels of the shipping interests in San Francisco. When they have obtained the necessary sea experience they will be entitled to take the government examinations before the United States Inspectors. Seventy-three students started in the second course, which is just about being completed. Since November 5 a third course is under way with an enrollment of 47. Eighteen students are enrolled at Los Angeles in an extension course conducted by Dr. S. B. Nicholson and Mr. Alfred Joy. The total number of students admitted so far to extension courses is 187. Over 100 students have signed for courses to be started in January.

Shipping Board Schools Mr. Farnham P. Griffiths, Lecturer in Law at the University, is the Section Chief for California of the Shipping Board Recruiting Office and has direct charge of the Navigation Schools of the United States Shipping Board in California. Similar success has been attained in the Shipping Board Schools at San Pedro under Mr. W. F. Meyer, at San Diego under Astronomer H. D. Curtis, and more recently at Los Angeles under Captain H. C. Frerichs. The men trained in these various navigation schools will constitute the officers who will be much needed to man the multitude of ships now being constructed by the United States as an essential part of her war programme. To December 10, 1917, 97 students have been admitted to the Shipping Board Schools in San Francisco, which are being taught by Dr. Einarsson, Dr. Neubauer, and Captain Harding. Of these, 40 have already passed the government examinations and received their licenses as masters or mates (mostly second mates).

Ordnance School

The War Department requested the College of Commerce of the University and several other leading colleges of commerce throughout the country to provide special short courses to train men for the position of Chief Storeskeepers, Ordnance Department, U. S. Army. In accordance with this request, a course was given, under the direction of Dean H. R. Hatfield, which began October 15 and ended November 24, 1917. In this initial course the number of students was limited to 30. At the beginning the instruction was given by members of the University faculty, with some assistance from students, and constituted an addition to their regular scheduled work. Those assisting in the work were T. T. Waterman, G. C. Chinard, F. E. Pernot, S. Daggett, Morris Lavine, and C. E. Spencer. In the last two weeks of the course the teaching staff was increased by the addition of Sergeant J. L. Green, detailed by the government to aid by giving instruction in Army Paper Work. Sergeant Green is a graduate in engineering from Cornell University, class of 1910. The students who completed the course have been sent to the Arsenal at San Antonio, Texas, for four weeks' additional training, after which it is expected they will be sent to the field. On the urgent request of the Chief of Ordnance, a second course of six weeks was started immediately upon the close of the first course with practically the same staff of instructors. The enrollment was 45. Again acting upon the urgent request of the Chief of Ordnance, a third course has been announced to begin January 15, 1918.

Second Course Started

Despite the fact that many of the best student officers have left to join the colors, the work of the Department of Military Science and Tactics has been amplified and strengthened. The place of Colonel J. T. Nance has been ably filled by Captain Lyman M. Welch, retired, as Professor of Military Science and Tactics and Commandant of Cadets. This year the University has established an infantry unit of the Reserve Officers' Training Corps, in accordance with the vote of the Regents on March 13, 1917. The United States furnishes arms, equipment, and part payment for uniforms for students belonging to the unit. The regular prescribed drill

Establishment of R. O. T. C. Unit

and theoretical work for all men in the first two years of the University course has been continued, and in addition men in the Upper Division who have completed the basic courses are offered the privilege of enrolling in the Senior division of the Reserve Officers' Training Corps. While acting as a cadet officer, in return for agreeing to carry out the prescribed course and pursue courses of summer camp training designated by the Secretary of War, each student is entitled to payment of commutation and subsistence as well as to his equipment. At the present time this commutation amounts to about nine dollars per month. Upon completion of work in the Reserve Officers' Training Corps, a graduate of the University is eligible for recommendation for a commission as a Second Lieutenant in the Officers' Reserve Corps. Distinguished graduates may be commissioned as provisional Second Lieutenants in the Regular Army. The Department of Military Science and Tactics in the University of California, therefore, provides a direct avenue whereby young men while pursuing their undergraduate course toward the bachelor's degree may yet qualify as Reserve Officers at the conclusion of that course. There are this term enrolled in the University Cadets 1218 men. Forty-seven students are serving as officers.

Graduates May Obtain Commissions

Curriculum Preparatory to Naval Service

A committee of the Academic Senate has drawn up a provisional plan for a series of courses designed to aid students in the University in qualifying for service in the navy of the United States. Subject to approval by the Senate, the curriculum preparatory for naval service will be inaugurated January 14, 1918. The course will cover all that is necessary for the examination for the Ensign's Commission (either line or engineer) in the Naval Reserve Force. These courses will be open to students in the University and credit in them will count toward satisfaction of the requirements for a degree. The work throughout will be entirely of university grade. The curriculum will consist of courses in mathematics, navigation and nautical astronomy, naval history, marine engineering, oceanography, seamanship, ordnance and gunnery, naval regulations and drill. Professor R. T. Crawford will be the supervising officer.

Marine Engineering Curriculum

The University is also planning to organize in the engineering colleges a curriculum in Marine Engineering and Naval Architecture. It is hoped that next year the work of the R. O. T. C. may be supplemented by a curriculum in Military Engineering.

War Work of Other Departments

Courses with a view to war service have been offered in many departments. The Home Economics Department has given several. The Department of Jurisprudence is giving a course in Military Law. The Department of Civil Engineering is giving a course in Military Engineering. Courses in Automobile Engineering and Aeronautics have been offered by the department of Mechanical and Electrical Engineering.

Plans for Training Wounded Soldiers

The Surgeon-General has asked the University to begin plans for a curriculum of training for wounded soldiers. Dean Hatfield and Dr. R. T. Legge have this matter in hand. When the plans of of the War Department are completed this institution will probably be called upon to offer instruction that will fit for useful vocations the men who have been maimed or incapacitated in the war.

Summer Course in Military Training

From June 18 to August 4 the University conducted a special course in military training under Major (now Colonel) J. T. Nance and seven officers of the University Cadets. One hundred and sixty-three men availed themselves of the opportunity to obtain seven weeks' training in the duties of non-commissioned officers.

Work of the Intersession

A special five weeks' intersession was held from Monday, May 21, to Saturday, June 23, under Dean Hart of the Summer Session. Its purpose was mainly to teach women ways in which they can be of patriotic service during wartime. There were 533 students enrolled. Among the subjects taught were Red Cross courses in first aid, home nursing, dietetics, public health, the preparation of surgical dressings, military telegraphy, the care of automobiles and gas engines, domestic science, home economics, and methods of social welfare work.

War Work in the Extension Division

The University Extension Division is, through its five bureaus, carrying on many varieties of work bearing upon the present war situation. Notable among their activities are the following: the work of the Bureau of Class Instruction in carrying on a School of Navigation in conjunction with the United States Shipping Board; in giving classes for enlisted men in French, mathematics, etc.; in special work in conjunction with the National League of Women's Service; in public speaking classes preparing speakers for the Liberty Loan campaigns. The Bureau of Correspondence Instruction has reduced the fee for enlisted men from $5 to $3 per course. It has given a number of courses bearing upon household management and food conservation. The Bureau of Lectures, the Bureau of Public Discussion, and the Bureau of Visual Instruction have, through their various agencies, taken to people throughout the state accurate information as to events connected with the great war and inspiration for the great cause in which we are engaged.

Spreading Information on the War

Expenditures on War Activities

A statement of expenditures made by the University of California in support of, or in connection with, war work from April 6, 1917, to October 31, 1917, shows that the University has administered for war purposes a total of $160,940.78, of which $29,616.41 was from University funds, $3256.20 from fees from students, $62,730.20 from State funds, while it also administered $65,337.97 of Federal funds for the conduct of the School of Military Aeronautics. These figures do not include the value of University equipment and buildings being used for carrying on this work, nor, with the exception of the figures for agriculture ($100,000 estimated total), do they include a statement of the value of the services of the regular teaching and administrative staff of the University who are devoting a considerable part of their time to work in connection with the war.

Let us now turn from the extraordinary activities of the University induced by the war and consider the happenings of the past year and the general condition of the University.

Expenditures and Income for 1916-17 The amount spent during the year ending June 30, 1917, for education and research was $1,086,234.30 (does not include special expenditures on "war work," $9622.47, and was exclusive of such matters as the University Hospital of the Medical School; the work of the Department of Agriculture, $547,973.77; expenditures on University Extension, the Los Angeles Medical Department, the Summer Session, and those two great research undertakings of the University, the Lick Observatory and the Scripps Institution for Biological Research). The expenditure on buildings and improvements was $1,869,331.01; on administration and operation (including such great items as lighting and heating, the care of grounds and buildings, the Infirmary, which was supported wholly by student fees at the rate of $6 per annum, the gymnasium, and publications) was $419,812.16; the disbursements from the class funds and for scholarships, fellowships, and prizes was $48,237.57, while there was an expenditure of $210,742.74, which represents merely the outgo in conducting various business enterprises of the Department of Agriculture and the University Farm, such as farm work of the University Farm itself, the maintenance of the dairy on the University campus, the manufacture and distribution of serum to immunize swine against hog cholera, and the inspection of commercial fertilizers, these expenditures being offset by receipts from these various activities for the economic or agricultural welfare of the state. The total expenditure for the year ending June 30, 1917, including all these items of building operations, the maintenance of hospitals and gymnasiums, the economic activities of the Department of Agriculture, and agricultural expenditures offset by agricultural income, was $4,566,815.09.

Sources of University Income The income of the University available for immediate use was $4,196,248.94, this figure not including additions to endowment during the year, which amounted to $123,805.64. The sources of this income were as follows:

The United States, for the Agricultural Experiment Station, the work of the Farm Advisors, and other forms of agricultural extension work, and aid in general to the teaching of agriculture and mechanic arts		$110,235.33
The State of California, for current expenses of the University	$1,184,318.71	
The State of California, for maintenance of the College of Agriculture and its various activities in experimentation and in agricultural extension	355,000.00	
The State of California, for building operations at the University	1,408,426.68	
The State of California, for the purchase of land and erection of buildings for various agricultural purposes, equipment and maintenance of the Los Angeles Medical Department, support of the Scripps Institution for Biological Research, University Extension, etc.	153,859.57	
The State of California, for War Work (partial)	5,068.32	
		3,106,673.28
Student fees, including gymnasium and Infirmary fees, Summer Session fees, laboratory deposits subject to return, etc.		292,048.68
Clinical fees from hospitals and the Dental Infirmary		80,707.47
Receipts from sale of agricultural produce, etc.		235,672.83
Income on endowment created by the United States, the State of California, and private donors		220,394.69
Gifts:		
For current use	$78,841.27	
For buildings and improvement	31,675.39	
For endowments	123,805.64	
		234,322.30
Income of the Kearney Vineyard		40,000.00
		$4,320,054.58

Assets of the University The present assets of the University are approximately nineteen and a half millions, of which the principal items are real estate and buildings, $10,902,863.58; equipment, $2,772,905.31; and investments, $4,932,116.97.

Hilgard Hall Completed A word should be said on the subject of the progress, during the past year, on the University building plan. Hilgard Hall, a second unit of the agricultural group, has been completed and dedicated. The total cost of this building, including equipment, was $375,000. This building is devoted to the work of the following departments: Viticulture, Genetics, Citriculture, Pomology, Forestry, Soil Technology, and Agronomy. Hilgard Hall and the new chemistry building, Gilman Hall, also completed this year, are the final pieces of construction carried out through the bond issue of $1,800,000 provided by the generous citizens of the state. The last annual report contained a detailed statement of how this money has been expended in carrying out the University's permanent building plan.

Gilman Hall

Gilman Hall, which cost with equipment $220,000, and which contains 1 classroom, 1 seminar, 5 shops, 22 laboratories, and 26 offices and studies has been used almost entirely by the Chemistry Department for its new researches bearing upon problems created by the war. It is highly appropriate that the first use to which this building should be put should be so closely connected with the practical need of the nation.

The new buildings stand as an evidence of the vision and skill of the University Architect, Professor John Galen Howard, and the administrative and business ability of the University's Comptroller, Mr. Ralph P. Merritt.

Sather Bells Now Installed

With the installation of the Sather Bells the Sather Tower is now complete. Standing in the center of our campus, it is at once a landmark and an inspiration.

The completion of these noble structures—Hilgard Hall, Gilman Hall, the University Library, Wheeler Hall, and the Sather Tower—has transformed the campus. Taken together with California Hall, Boalt Hall, the Hearst Memorial Mining Building, and the Greek Theatre, they give a preliminary idea of the future campus when the Hearst plans are completely carried out.

Passing of Old North Hall

Old North Hall, about which clung so many University memories and traditions, has finally been demolished except for a pathetic fragment which by way of compromise has been retained to house the offices of student publications, the Associated Students' Store, and student eating places. This, by its incongruous presence in the midst of the completed buildings, emphasizes more strongly than ever the glaring need for the erection as soon as it is possible of a students' union, which will be the center of all the activities that now go on in the basement portion that has been temporarily retained of old North Hall.

Need of Student Union Emphasized

A new building is needed for the student offices, for the college publications, for eating places, and particularly for the A. S. U. C. Store, whose yearly sales are over $111,000. This Students' Union we may not be able to secure until after the war, but it will continue to be a pressing need of the University. Undoubtedly, when the time is ripe for it, the Alumni Association, which is fully awake to the need for a Students' Union and Alumni Hall, will wage a vigorous campaign to secure this building for the campus.

Buildings Needed

Other buildings needed by this University and referred to in last year's report are: An auditorium seating at least five thousand, equipped with an organ and containing in the building a smaller auditorium for use as a Little Theatre, the total cost of such a building, if constructed of reinforced concrete, to be about $750,000; a new gymnasium; an adequate armory, the estimated cost of which is $200,000; and, as set forth on page 133 in the report of the Dean, at the Medical School a home for the nurses of the University Hospital, and a new out-patient department.

It would not, of course, be wise to engage in extensive construction of buildings while we are in the present war, but it is well to bear these needs in mind in order that when the auspicious time arrives they may be adequately met.

The New University Hospital

The University is proud of the new University Hospital, which will undoubtedly prove to be an essential factor in the upbuilding of the Medical School. The hospital, which is situated at the Affiliated Colleges site, Fourth and Parnassus avenues, in San Francisco, is an example of modern equipment in every respect and offers almost unlimited facilities for clinical work in connection with the curriculum of the Medical School. It was constructed at a cost of $725,000, about $75,000 of which was expended on furnishings and equipment. Despite the fact that due to its patriotic response to the need of the nation for trained medical men for war service the ranks of the staff of the Medical School of the University have been somewhat depleted, it has been possible because of the new hospital to carry on most effectively the work of the school.

There is None Too Much Classroom Space

An interesting side-light on the matter of building space at the University is furnished by statistics presented by the Recorder of the Faculties. In May, 1917, he found that the average weekly use of a room in Wheeler Hall, the main classroom building, was 22.9 hours. The average weekly use of North Hall, its predecessor, the year before was 27.31 hours per room. Taking into account the normal increase of enrollment in the University, which of course has been temporarily suspended by the war, the Recorder estimated that by 1920 with our present classroom facilities for the general culture departments the pressure would be just as great as it had been in 1915 before the completion of Wheeler Hall.

Increased Cost of Living Necessitates Larger Salaries

In last year's report attention was called to the fact that while the general cost of living in the decade from 1906 to 1916 advanced more than 50 per cent, the increase in the salaries of professors during that period averaged only 22.8 per cent; of associate professors, 10.73 per cent; assistant professors, 18.47 per cent; and instructors, 19.18 per cent. Through generous provision by the Legislature and action of the Regents it was possible for the year 1917–18, as a result of the showing made in last year's report, to increase by approximately 15 per cent the salaries of men of the grades of instructor and assistant professor and a few of the grade of associate professor. We find, however, that from December, 1916, to December, 1917, the cost of living, as measured by an index number of twenty important foods in the bay region, advanced 32.7 per cent, according to estimates made by Mr. F. R. Macaulay of the Department of Economics.

Activities in Southern California

The University has this year undertaken extensive expansion of its activities in southern California. In conformity with the declaration of purpose by the Regents to hold a summer session in southern California in 1918, arrangements have been made for the operation of a Summer Session in southern California for six weeks, beginning June 24, 1918. The site selected is Los Angeles. The school authorities in the southern part of the state have co-operated most kindly with the University in adjusting school calendars to fit the needs of the Summer Session, and the Board of Education of Los Angeles has generously offered the use of the new Los Angeles High School for the session. Dean Walter Morris Hart will have charge of the Summer Session in Los Angeles, as well as the Summer Session at Berkeley. The course of study to be offered is of the same general standard as that offered on the campus of the University.

Extension Work in Southern Part of State

The Regents have also decided to devote at least $15,000 for the biennium 1917–1919 to University Extension work in Southern California. Special headquarters have been established at Los Angeles, and an advisory committee of over fifty citizens of southern California has been appointed to co-operate in directing the plans and policies of the extension work in that part of the state. Under the personal supervision of Dr. Ira W. Howerth, Director of the University Extension Division, the organization of the work has been already well advanced in each of the departments of class instruction, correspondence instruction, and public lectures.

The University Desires to Serve Southern California

It is the desire of the University to meet in every possible way the educational demands made upon it by the southern part of the state. A considerable percentage of the students enrolled at Berkeley come from south of the Tehachapi, and 20 per cent of those who come to the Summer Session at Berkeley are from southern California, but there are many residents of that part of the state, notably teachers in the schools, who can more easily take advantage of the opportunities offered by our Summer Session and by our University Extension courses now that centers for this work have been established in Los Angeles.

The functions of the Board of Regents include whatever undertakings in the field of the higher learning and of research may be provided by the state in whatever section thereof; thus, for example, at the Lick Observatory on Mt. Hamilton, at the

Marine Biological Station at La Jolla, at the Citrus Station in Riverside, or at the Medical School in San Francisco. The Regents constitute a statewide board of trust made up of men from all parts of the state, responding to the interests and needs of all, and taking under its care such institutions or departments of learning and research as the state may from time to time create. What it shall create will be from time to time determined by the need, but thus far the degree-granting power as exercised on behalf of the state has been limited to the Board of Regents, and, it would seem, wisely so limited.

Valuable Work of the Alumni Association

The report of the Alumni Association for the past year shows a period of most effective endeavor under President Oscar Sutro, '94, and Secretary Harvey Roney, '15. The association has for the time being lost Secretary Roney, who is now a Second Lieutenant in the National Army. Mr. Roney's regime has been marked by efficient and far-sighted management of alumni affairs. The issuance of the directory of 12,706 different names was a piece of work remarkable for its thoroughness and accuracy. The plans for a bureau of alumni employment, which were well under way at the outbreak of the war, were well reasoned and form the basis of a real service that the association can render graduates of the University. Since the outbreak of the war the association has devoted practically all of its energies to work in connection with the military situation, and besides conducting a military census of the alumni is now aiding in the work of the Military Information Office.

Compensation Insurance for Employees Adopted

Compensation insurance for all employees was authorized by the Regents January 9, 1917. This action extended to every person on the University payroll the benefit of the Workmen's Compensation Act, and placed the University in its due position as a just employer of labor.

Dr. Sanford's Studies of Spiral Nebulae

Important studies in the distribution of spiral nebulae have been carried on at the Lick Observatory by Dr. Roscoe F. Sanford, Fellow in the Lick Observatory, in an effort to explain the scarcity of these nebulae in and near the Milky Way. These studies, explained further in the report of the Lick Astronomical Department in this volume, are described in detail in Lick Observatory Bulletin No. 297.

Wilmerding School Works With Retarded Students

The problem of the retarded students—those who drop behind pupils of their own age in the elementary schools—has received attention in the Wilmerding School. Experience with several groups of retarded boys suggests that a possible solution is to give such students mechanical training of the cruder sort, accompanied by classroom instruction in composition, closely correlated with the mechanical work, arithmetic, and the other usual subjects of the school.

Intercollegiate and Intramural Athletics

The war has played its part in altering the position of intercollegiate and intramural sports and of physical education. The students themselves, in whose hands the conduct of athletics largely rests, decided to continue intercollegiate competition, but to eliminate all unnecessary expenses, such as training tables and long trips. In spite of the decreased enrollment of men students, there was for the semester August-December, 1917, an increase of 8.6 per cent in the number participating in intercollegiate sports and a decrease of only 3.4 per cent in the number participating in intramural sports. The increase in the intercollegiate sports is due to the growing popularity of the ''minor'' sports, such as tennis, basket-ball, etc. The number participating for instance, in football, rowing and baseball, decreased. With the continuance of the war it is inevitable that competitive sports between universities and colleges will steadily shrink away toward the vanishing point. This may yield us a valuable opportunity of observing just how essential to the well-being of the college community these sports may be. Meantime, while the shrinking process is going on through the decline in the number of male students, we shall be returning to the conditions of twenty-five years ago, when we had three hundred male students, all or a large proportion of whom could if they chose participate in athletics. In these latter years the intercollegiate athletes have come to be no more than a saving remnant of the student body, a group of highly trained specialists who go down like gladiators into the dust of the arena, while Rome looks on and howls. It is not to be denied that these sports have a distinct value not only to the participants but also to the college community. The physical exercise is valuable, so is the effect on the institutional consciousness, the impulse toward college loyalty and the sense of solidarity. But the result is out of proportion to the mechanism. Everything is done for and through the few, and nothing for the mass. California Field and the Running Track with their vast encirclement of bleachers stand idle, so far as the many are concerned, most of the time, waiting for the specialists to come. Out of four thousand male students, perhaps two hundred ever use the two fields. And yet these fields stand in the midst of the college life occupying the most valuable of its lands, and their tiers of bleachers are called to full use only for two or three occasions of the year.

And yet our criticism is in reality directed less against these provisions for the athletes than against the lack of provision for the average student. The essential fact is that in twenty-five years while the number of our students to be cared for has multiplied by twelve we have only doubled our space. In making the transition we have crowded out the average student. But it is the non-athletic student who needs our attention most.

In considering the proper site for a new Gymnasium we must recognize first of all that the ground occupied now by California Field and the Running Track is insufficient for general student purposes, even if the bleachers should be removed. In the second place, the lot at the southeast of the Sather Gate could serve only for a gymnasium to be used by those occupying the California Field and the Track. Thirdly, the open field west of California Hall coupled with the whole field west of Hilgard Hall is none too large to meet the joint needs of a general student athletic field and military drill ground. If we limit ourselves to land now owned by the University, this is clearly the best site; if we are to go outside, the Bunnell tract, between Grove and Milvia streets, would offer advantage in grade. Fourthly, the new gymnasium must be located and equipped for general student use, not for the restricted use of intercollegiate athletics. This points to a site midway between fields just mentioned. Fifthly, it was clearly the purpose of Mr. E. V. Cowell, in providing for an athletic field and a gymnasium, that the interests of the entire student body should be served rather than the interests of a special group. His gift was noble and his purposes large and far-reaching. Our response in planning for its use must be equally large. These tentative suggestions which I here present involve I believe such a response. It means that the whole northwest area of the campus properly graded and equipped should constitute the Cowell Field of the future—a field devoted to the physical and moral upbuilding of all the students of the university for all the days to come.

The Semicentenary During the week preceding Charter Day, from March 18 to March 23, 1918, the University of California will celebrate its semicentenary. Delegates have been invited from 90 universities of the United States. Representatives of 21 foreign governments have been invited to participate. A special set of Semicentennial Publications, now well under way, will be issued by the University. Under the various lectureship foundations, such as the Hitchcock Lectureship, the Sather Foundation, the Weinstock Lectureship, the Mills Foundation, and by specially established lectureships, there will be brought to the University a group of noted scholars from various parts of the country. There will be a National Service Day, an Alumni Day, and a day devoted to the undergraduates. There will be a Conference on International Relations. The semicentennial week will culminate in the Charter Day exercises at the Greek Theatre.

Respectfully submitted,

BENJ. IDE WHEELER,
President.

SUMMARY OF REPORTS

SUBMITTED TO THE PRESIDENT BY DEPARTMENTS*

Agriculture.—The annual report of the College of Agriculture last year dealt chiefly with current research activities and results of investigations completed, coupled with a comprehensive statement of the investigations which the Experiment Station had been unable to undertake either through lack of time, facilities or funds. This year the annual report, published separately, as usual, deals chiefly with non-resident instruction, popularly known as extension work.

The County Farm Bureau organization, which the College has been developing since July 1, 1913, in co-operation with the U. S. Department of Agriculture has proved of service in connection with the present great crisis, and has been largely extended through the allotment from the emergency appropriation given by Congress to the Secretary of Agriculture. The College has further supplemented this field of service by the use of a considerable number of the members of the staff who are ordinarily chiefly engaged in research or resident instruction. The willingness with which the members of the staff have adjusted themselves to meet these new conditions and the enthusiasm with which they have entered upon their new work is inspiring.

From an industrial point of view this country has been engaged in the war since August, 1914. These new conditions have been reflected in the attendance at the colleges of agriculture in this country. For example, of the 637 students in the College of Agriculture in this institution in 1915–16, 108 received degrees. Of the 529 remaining, 176, or 33 per cent, failed to return for the first semester of 1916–17. There were 314 Farm School students at the University Farm during the year 1915–16, of which 63 were graduated, while 122, or 48 per cent, of the remaining students, failed to return to the School during the first semester of this school year.

Reference in the last annual report was made to the fact that only 32 per cent of the students of the College of Agriculture came directly from farm homes. There is some reason to believe that the falling off in students has been chiefly from the cities, due on the one hand to greater industrial activities, which have readily absorbed prospective students, and on the other hand, to the greater interest created thereby in commerce and mining engineering. It is believed that the interest on the part of farm-bred men is on the increase.

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* For report of departments of Anatomy, Biochemistry and Pharmacology, Pathology, and Physiology, see pp. 136, 139, 143, in the report of the Medical School beginning on p. 133.

The total enrollment of university students in the College of Agriculture for 1916–17 was 623, compared with 637 for 1915–16. At the University Farm School it was 314, the same as for 1915–1916. There was greater activity than ever in the Farmers' Short Courses. There were 197 persons registered, compared with 181 in corresponding courses last year. The new course in farm tractors caused an additional enrollment of 53, making a total enrollment in these short courses of 250. Thus the total enrollment of residents in agriculture for 1916–17 was 1187, compared with 1132 in 1915–16.

The interest in the correspondence courses in agriculture continues to be well maintained. During the year ending April 30, 1917, 6248 persons registered for the 25 courses in agriculture. Previously 23,374 had registered, making a total registration of 29,622. However, 8137 re-enrollments bring the total up to 37,759. During the year 3780 students have completed one or more courses.

The College of Agriculture has been developing brief courses of instruction to meet special interests. For example, the last week in December a course for veterinary practitioners was held at the University Farm School, with an attendance of 79 veterinarians. The first week in January the wool growers had a convention at the University Farm, while in February the Berkshire swine breeders had a meeting and sale. The Citrus Experiment Station held a Citrus Growers' Institute at Riverside in November, with an attendance of something over 500.

The Farm School picnic, which has grown into a great farmers' field day, occurred this year on April 28, with an attendance of 14,443 persons and 2366 automobiles. It was more educational than heretofore, and was a credit to the organizing ability and enthusiasm of the students, who are chiefly responsible for its conduct and success.

The College of Agriculture has Farm Advisors in eighteen counties, in which about 200 farm centers are organized, with a membership of about 6000 farmers. Certain allotments of funds from the Secretary of Agriculture will make it possible to extend this system rapidly.

Boys' agricultural clubs have been organized in more than 100 high schools, with an average of about ten boys to a club. Each boy competes for a prize on the basis of net profit. Every two weeks during the period of this contest each boy receives written material for study concerning the crop or animal which he is raising.

As soon as it became evident that the boys' movement in the high schools was succeeding, the College was strongly urged to extend the movement to the grammar schools. It has now made arrangements with fifteen boards of education by which in each of fifteen high schools a trained teacher of agriculture spends eleven months in the year at his work and supervises boys' club contests in the grammar schools.

Directly or indirectly the College of Agriculture is coming in contact with boys between the ages of 10 to 14, with young men between the ages of 15 to 18, and with mature farmers. The College also reaches young men between the ages of 18 and 23, so far as they attend the College, either at Berkeley or Davis.

If all young men who intended to engage in farming came to college for instruction nothing more would be needed. They do not, however, neither do they attend the farm bureau meetings, because these meetings are of chief interest to more mature people. The experiment is now being tried of establishing junior farm bureau meetings composed of young men who are definitely out of public schools but who are not yet ready to take part in the farm bureau meetings composed of older people. Thus, when this plan comes into full operation, there will be a method of reaching all the mature farmers of the State and all boys 10 years of age and over, who desire to engage in agriculture. This whole problem will be further influenced by the passage of the Smith-Hughes Bill, which provides money to be used for salaries of persons who teach agriculture, giving at least one-half of their time in actual instruction on a farm.

During the year there have been published eleven Bulletins and fourteen Circulars, in addition to the Director's Annual Report, the Prospectus of the College of Agriculture for 1917–19, the Announcement of Courses in Forestry for 1916–17, and the Farmers' Short Courses, September 24 to November 2, 1917. Altogether 832,000 copies have been printed, of which 800,000 have been distributed. The mailing list has increased from 31,000 to 35,400 addresses.

BULLETINS

Bul. 270. A Comparison of Annual Cropping, Biennial Cropping, and Green Manures on the Yield of Wheat. B. A. Madson.
Bul. 271. Feeding Dairy Calves in California. F. W. Woll and E. C. Voorhies.
Bul. 272. Commercial Fertilizers. P. L. Hibbard.
Bul. 273. Preliminary Report on Kearney Vineyard Experimental Drain, Fresno County, California. W. W. Weir.
Bul. 274. The Common Honey Bee as an Agent in Prune Pollination. A. H. Hendrickson.
Bul. 275. The Cultivation of Belladonna in California. Albert Schneider.
Bul. 276. The Pomegranate. R. W. Hodgson.
Bul. 277. Sudan Grass. B. A. Madson and P. B. Kennedy.
Bul. 278. Grain Sorghums. B. A. Madson.
Bul. 279. Irrigation of Rice in California. R. D. Robertson.
Bul. 280. The Economic Irrigation of Alfalfa in Sacramento Valley. S. H. Beckett and R. D. Robertson.

CIRCULARS

Cir. 153. Some Observations on the Bulk Handling of Grain for California. B. H. Crocheron and C. J. Williams.
Cir. 154. Announcement of the California State Dairy Cow Competition, 1916–18. F. W. Woll.
Cir. 154. Irrigation Practice in Growing Small Fruits in California. W. A. Hutchins.
Cir. 155. Bovine Tuberculosis. C. M. Haring.
Cir. 156. How to Operate an Incubator. J. E. Dougherty.
Cir. 157. Control of Pear Scab. R. E. Smith.
Cir. 158. Home and Farm Canning. W. V. Cruess.
Cir. 159. Agriculture in the Imperial Valley. A Manual for Settlers. W. E. Packard.
Cir. 160. Lettuce Growing in California. S. S. Rogers.
Cir. 161. Potatoes in California. J. W. Gilmore.
Cir. 162. Bacillary White Diarrhoea or Fatal Septicemia of Chicks and Coccidiosis or Coccidial Enteritis of Chicks. J. R. Beach.
Cir. 163. Some Fundamental Considerations Affecting the Food Supply of the United States. Memorandum Prepared for the Committee on Resources and Food Supply of the State Council of Defense. Thomas Forsyth Hunt.
Cir. 164. Small Fruit Culture in California. A. H. Hendrickson.
Cir. 165. Fundamentals of Sugar Beet Culture under California Conditions. R. L. Adams.

Anthropology.—During the past year thirteen courses have been given by the staff of four to an aggregate attendance of nearly 700. Gifts from Mrs. Hearst have greatly enhanced the display of Egyptian and Peruvian collections. One hundred and seventy-four lectures were given in the Museum by Curator Gifford, and 24 by other speakers. The total number of visitors to the museum was 30,817. Two hundred and eighty classes of school children, aggregating 17,618 pupils, studied the exhibits.

Research has centered about the remarkable fortunes and customs of the Yahi Tribe, whose last survivor died recently, and about the Indians of Southern California.

Architecture.—The standards of attainment of the Department of Architecture are being gradually and steadily raised, especially in architectural design. The exhibitions, limited to the work of the department, have been practically continuous throughout the year. The registered attendance of visitors has been 6130, the actual number having largely exceeded this figure.

The most pressing needs of the department are as follows: A fireproof room for the department library; undergraduate scholarships and graduate fellowships; prizes for distinguished work, for the bachelor's degree, the master's degree, and the degree of graduate in architecture; and the creation of a Chair of Landscape Architecture, either as a part of, or in close affiliation with, the School of Architecture.

Astronomy.—During the year instruction in navigation and nautical astronomy has been undertaken independently of the regular courses in practical astronomy by offering a correspondence course through the University Extension Division, by conducting a double course in navigation and nautical astronomy during the Summer Session, and by preparing for a full course to be offered in the regular session, 1917–18. These courses were designed to meet the national demand for the training of officers for the merchant marine. They are in charge of Dr. F. J. Neubauer, who has been particularly energetic in the organization of these courses.

Through the Committee on Astronomy of the Pacific Coast Research Conference, of which Professor A. O. Leuschner is chairman, the United States Shipping Board was offered the co-operation of the astronomers on the Pacific Coast in conducting the navigation schools of the Board. The offer was accepted by the Shipping Board, and to Professor Leuschner has been delegated the selection of instructors for its California navigation schools and the supervision of the instruction. Mr. Farnham P. Griffiths is administrative officer of the Shipping Board for California. The instructors chosen from the faculty and graduates are Dr. H. D. Curtis, Mr. W. F. Meyer, Dr. F. J. Neubauer, Dr. Sturla Einarsson, Dr. A. R. Williams, and Mr. C. D. Shane.

Supplementary to the these schools, which are open only to seamen with at least two years' experience, a day class and a night class, both in charge of Dr. Neubauer, have been organized in San Francisco under the auspices of the University Extension Division. These classes are open to students without sea experience. Demand for similar extension classes in the southern part of the State is constantly growing and plans are under way to meet this demand in the near future.

Professor A. O. Leuschner, Director of the Observatory, is active on various committees associated with national defense, while Professor R. T. Crawford has maintained the organization of the department in spite of the entrance upon national service of the majority of the members of the instruction staff.

No material changes in the organization of instruction, in attendance, or in equipment, have occurred during the year except that the freshman instruction in Elementary Astronomy and the supplementary observatory work is now being offered as a five-unit course. The increasing demand for admission to elementary observatory work by lower division students cannot be met until provision is made for additional laboratory space.

The department has continued its research activities and has taken the lead in the determination of orbits of newly discovered comets and has furnished ephemerides for the use of observatories throughout the world. This work has been exceptionally successful during the past year and has been favorably reviewed in practically all astronomical publications.

Botany.[*]—The University Herbarium shows a reasonable amount of growth for the year. Seven thousand three hundred fifty-three sheets have been mounted, bringing the total in the permanent collection to 198,055 sheets. Loans of specimens for the use of specialists have been made to the following institutions: Gray Herbarium of Harvard University; U. S. National Museum, New York Botanical Garden; Missouri Botanical Garden; Field Museum of Natural History; University of Michigan; Southern California Academy of Sciences; Dudley Herbarium of Stanford University; and Maryland Agricultural Experiment Station. In addition to this, several thousand duplicate specimens have been sent out on exchange. In reply to inquiries, mostly from people within the State, 2163 items of botanical information have been supplied from the Herbarium.

There is urgent need for increased room, both for lecture and laboratory work. The increasing demand upon the Herbarium necessitates increased expenditure. Trained assistants should be supplied and a moderate increase for current expenses. Steel cases are needed in order to protect the specimens.

More space should be provided for the Botanical Garden in some location where intensive experimental work can be carried on and where there will be no danger of interference from other interests. Important investigations in genetics and experimental taxonomy are now well under way, but the many valuable cultures are in danger of being lost because of demands upon the department's space. Even though the department is not molested, the present facilities are inadequate. The only remedy suggested is that already urged, *i.e.*, the removal of the gardens to the Strawberry Cañon site.

Celtic.—The Department of Celtic has pursued its usual policies throughout the last year. It suffered an indirect loss through the discontinuance, due to war conditions, of the annual contribution of the Knights of St. Patrick for Celtic books for the Library.

Chemistry.—War conditions have presented to the Department of Chemistry new problems and responsibilities. Its energies during the war will be devoted almost exclusively to the training of students and to investigations of interest to the government. Some of these problems are distinctly military, others, no less important, deal with the utilization of waste products and the maintenance of the supply of needed chemicals.

This association with industry emphasizes too strikingly the enormous discrepancy between academic and business salaries. The recent rapid developments of chemical manufacture and the unprecedented opportunities offered to young chemists have resulted in a general exodus from the universities. During a single year American universities have lost from their chemical staffs probably one-half of the most promising men. This movement, which shows no sign of abatement, threatens not only the universities, but also the industries themselves, for their very existence depends on a constant supply of men with the fullest university training.

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[*] A list of gifts presented to the Department of Botany, its gardens, museums, and herbarium will be found on pp. 177–181.

Civil Engineering.*—During the absence of Professor Charles Derleth, Jr., on Sabbatical leave throughout the last year, Professor C. G. Hyde has acted as Dean of the college. Mr. W. F. Langelier has joined the staff as Assistant Professor of Sanitary Engineering, and Mr. E. D. Hayward, as Instructor in Civil Engineering.

An increasing amount of the department's work is being given to students majoring in other departments than Civil Engineering. Due to the peculiar conditions of the last few years, the present enrollment in Civil Engineering is reduced considerably below that of the previous period.

It is greatly to be hoped that the Department of Irrigation will eventually be housed, and, better still, be merged, with this department. Some hydraulic apparatus should be obtained and located in the building now temporarily devoted to anatomy. In the near future professorships should be established in architectural engineering and in surveying and geodesy. In order that the Bureau of Sanitary Engineering, maintained by the California State Board of Health, may be kept in Berkeley, it will be necessary that additional space be furnished the Bureau.

The Department of Civil Engineering has an equipment and a personnel which should be made effective in a program for national service. The department has surveying instruments, camp equipment, and well-equipped laboratories, and various members of the staff are competent for specialized work in problems which the war will furnish. A course in military surveying is already offered and a course in military engineering is proposed.

Drawing and Art.—Upper division and graduate work in this department has been strengthened during the past year by the addition of several new courses, and as a result there has been a large increase in the number of those working for the high school teacher's certificate in drawing. In the lower division the work has been reorganized and the number of sections has been increased. This will not only accommodate more students, but will permit of smaller classes, a decided advantage to the individual.

Economics.—The department has suffered the loss of two of its members, Professor C. H. Parker and Mr. Lewis Lilly, but it has been able to develop courses in economic theory with the aid of an additional instructor in this important field. The most urgent need is for a professorship in business organization.

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* A list of gifts presented to the Department of Civil Engineering during the year will be found on p. 181.

There have been no important changes in policies of instruction. The system of honors referred to in the last report has called out an unusual amount of student work of excellent quality, and may be pronounced a success so far as the Department of Economics is concerned. Certain changes in methods of elementary instruction adopted in 1915–16 have been tried and shown to be desirable. The essence of these modifications has been a reduction in the number of lectures in the beginning course and an increase in the number of section meetings, together with a larger participation by the whole department staff in the introductory work.

The department has discussed the wisdom of encouraging the teaching of economics in the high schools, but has come to no conclusion. The evidence at present available seems to show that students who have studied economics in the high school do not make better records in Economics 1A–1B than students who have not had this preliminary training. The data are not sufficient, however, for confident judgment.

Education.—Every possible effort has been made by the staff of instructors during the year to cope with the problem of meeting the needs of 1500 students without neglecting the claims of productive scholarship and the constant demands for extra-mural services.

In spite of the fact that the prospective teachers are as yet without a building they can call their own, there has been gratifying progress in the development of professional interest and spirit. There is less aimless taking of courses and more genuine self-activity than ever before. Even those who expect to teach only while they wait cannot be complained of on the score of perfunctory performance. The number of young men choosing teaching as a profession has continued to increase in a gratifying manner. Several study groups organized by the men have carried on work throughout the year in fields not covered at present by courses.

During the coming year the department hopes to put into operation plans whereby, with the co-operation of the departments of English and Public Speaking, candidates for the teaching profession will be trained more adequately than hitherto in the effective use of oral English.

There is great need of courses for ambitious elementary teachers and for those especially interested in the new educational problems of the intermediate school. But until it becomes possible to add to the staff one man for elementary education and another for educational psychology, the department will be unable to enlarge its functions so as to meet the demands of the situation.

English.—The most important innovation of the past year was the creation of a University Committee on Students' English. Instructors in all departments report to this committee the names of students who are deficient in the fundamentals of English expression, and special instruction is given these students according to their individual needs. During the year, 120 students have been reported for this work, and twenty more have reported of their own accord. A somewhat similar course has been instituted for foreigners, and has been voluntarily attended by 48 students. The course recently established for the training of students in the Colleges of Engineering and Commerce devotes its time to preparation of oral and written subjects cognate to the work of these colleges.

To aid in correlating the University training of teachers with the experience of present high school teachers, all prospective teachers of English are required to take a course in the teaching of English given by Miss Emma J. Breck, head of the English Department of the University High School.

For ten weeks of the second semester the members of the department conducted a series of public readings in English Literature two evenings a week.

An insufficient number of instructors has handicapped certain established courses. The regular freshman course in composition has been continued and improved, but more than a hundred students were turned away during the second semester. In advanced composition, where the character of the work demands sections of not more than fifteen or twenty students each, the number of students turned away is more than the number accommodated. There is at present a need for more sections and more instructors.

Geography.—During the past year there have been 750 students enrolled in the department, an increase of more than 100 over the preceding year. For two years past the applications for admission to the Freshman course have exceeded the seating capacity of the lecture room in Bacon Hall. Rather than to continue to limit registration, it would seem desirable in the future to move, if possible, to a larger room, even though it may be impracticable to carry there all the models and maps now in use. The laboratory work would of necessity be held in Bacon Hall.

There have been frequent requests for more upper division courses in regional geography, but until it is advisable to increase the teaching force, little more can be added.

Dr. J. P. Buwalda has resigned his position as Instructor in Geography and accepted an Assistant Professorship in Geology at Yale University. During his two years of service his personality, his teaching, and his scientific research have made him an uplifting force in the department.

Geology and Mineralogy.—Professor George D. Louderback returned to Berkeley early in the year after a sojourn of about two years in the Orient, engaged in geological research. Associate Professor A. S. Eakle was absent on Sabbatical leave during the year, and his duties were efficiently discharged by Mr. M. G. Edwards. Mr. E. F. Davis, Instructor in the department, received the degree of Doctor of Philosophy, his thesis, now in press, being an important contribution to the geological study of the California Coast Ranges. There has been a notable increase in graduate students over the number in attendance in previous years.

Bacon Hall continues to be inadequate for the large class in geology, and the efficiency of the instruction is impaired by conducting the work in other parts of the campus where it is practically impossible to use illustrative material. The clock tower on Bacon Hall is a menace which should be removed. The department would be most effective in the line of geological research if it had a fund for defraying the expense of geological field work at points in the state remote from Berkeley.

The records of the seismographic stations at Berkeley and at the Lick Observatory have been compiled and prepared for publication by Dr. E. F. Davis and the customary half-yearly bulletins have been issued. A number of contributions to geological science have been made by graduate students, and are now in process of publication.

German.—Apart from minor changes in the direction of better organization, there has been no departure from other years. The most gratifying feature of this year's work has been the rise in the standard of the upper division courses, due to putting elementary courses upon the five-hour basis, and the consequent establishment of a new intermediate course as a requirement for admission to the upper division.

The total enrollment for the department in the two semesters of the last academic year was 1253 for the first semester, and 1178 for the second semester as compared with 1214 and 1232 for the corresponding semesters of the year 1915–16; 1274 and 1198 in the year 1914–15; and 1312 and 1244 in the year 1913–14.

Greek.—During the first semester this department was fortunate in having the services of Professor Paul Shorey of the University of Chicago as Sather Professor of Classical Literature. In addition to conducting a course in Aristophanes and a seminar in Plato, Professor Shorey delivered twelve lectures on Plato, and four evening lectures on subjects pertaining to Greek life. Following a custom inaugurated in the preceding year, Professor Allen gave four public readings of Greek dramas in English translation. During the second semester Professor Gordon J. Laing of the University of Chicago conducted two courses in Greek as Lecturer in Classical Literature on the Sather Foundation.

The course in Greek A will be given in the coming year as a double course, so that the work formerly covered in one academic year will be covered in one semester. The enrollment of 76 students for this course makes it one of the largest classes of beginners in Greek in the United States.

History.—Professor H. Morse Stephens' absence during the second semester because of illness was the regrettable feature of the year's work. Professor Stephens' place as head of the department was taken by Professor H. E. Bolton, while Professor Carlton J. Hayes of Columbia University took charge of History 1, and one special course in 19th Century European History. Dr. K. C. Leebrick gave the courses in Modern European History, and upon the French Revolution. The lamented death in Spain of G. L. Albright, Native Sons' Traveling Fellow, has been a serious blow to the department. The Native Sons of the Golden West have renewed their generous gift and consented to allow the fund to be used for four resident fellowships in Pacific Coast History instead of for traveling fellowships, in consideration of the difficulty of European study this year.

The curatorship of the Bancroft Library has been transferred from Professor H. A. Teggart to Professor H. E. Bolton. The special devotion of Professor Bolton to Spanish-American History makes him particularly fit for administering the work of the Bancroft Library. Professor Bolton delivered the Faculty Research Lecture for the past year on ''The Missions as a Frontier Institution.''

The department has been active in publication. Mention should be made of Professor Chapman's book on ''The Founding of Spanish California,'' published by the MacMillan Company; Dr. Priestley's ''José de Gálvez,'' published in the Historical Series by the University of California Press; and Dr. Westergaard's book on the Danish West Indies. Professor Teggart's ''Prolegomena to History'' was published by the University Press during the past year, and has attracted much attention among historians. Last should be mentioned the publication of ''The Pacific Ocean in History,'' a collection of papers read before the Panama-Pacific Historical Congress of 1915.

The present need is a professor who can cover the field of the Renaissance and the Reformation in Europe. A great step in advance has been the setting aside of a room devoted to a collection of sources of European History in the Library. It is hoped that in time there will be a special library attendant, conversant with history, in charge of this room to aid and advise students in their reading.

Home Economics.—The erection of the Home Economics Building in the spring of 1916 centralized and co-ordinated the courses which now constitute the two divisions of the department, namely, household art and household science. The division of household art deals with the subjects of clothing and shelter, and that of household science with food. Both divisions have grown rapidly. The enrollment in household art numbered 152 in the first semester, and 117 in the second, and household science 92 in the first semester, and 75 in the second. Of the total enrollment, 27 in the first half-year, and 17 in the second half-year were graduate students.

A fine co-operative spirit has sprung up between this department and the faculty and students of other departments in the University. The students in household art have obtained practical experience in designing and executing costumes for the Partheneia and Extravaganza. By the co-operation of the University of California Hospital graduates in household science have been offered several months of practical experience in hospital work.

A ''self-conducting'' seminar has finished a syllabus for a high school course in household chemistry. The daily mail brings an ever increasing demand for correspondence courses, bulletins, and extension class instruction regarding food preparation, dietetics, marketing, clothing, and similar problems. As an emergency war service the department, during the special term from May 21 to June 22, offered courses in home dietetics, food conservation, garment construction, and renovation of clothes.

Hygiene.—Hygiene 2 was conducted this last year as a lecture course with the addition of bi-weekly section work consisting of recitations on the lecture notes and assigned readings in a new text book, ''How to Live,'' by Fisher and Fisk. The value of the section work cannot be overestimated. Hygiene 102, given in two sections, fourteen students in each section, is for those who are preparing to teach hygiene. The course in epidemiology was continued according to the plan inaugurated during the preceding year. In response to a request for suggestions for the improvement of the course, more than one-fourth of the students asked for weekly section meetings, although no credit has been given for time spent in the present bi-weekly meetings.

The course in Health Surveys and the course in the Hygiene of Communicable Diseases were conducted so far as possible on a seminar basis. For several years we have considered extending the course in Public Health Laboratory to cover two semesters' work. This change is necessary on account of the increased amount of instruction required in order to fit a student to meet the growing demands of public health laboratories.

The Department of Hygiene established, during the past semester, a course in Mine Sanitation. A Red Cross course was given in the intersession under the guidance of Professor Force, Doctors Gompertz, McVey, and Cunningham, Miss Sherman, and Mrs. Calder.

Students in this department have completed a survey of school ventilation in the cities of Oakland and Berkeley, and a study of the cost of health administration in Alameda County under the proposed city and county government.

Irrigation.—The three volumes on ''Irrigation Practice and Engineering'' by B. A. Etcheverry have been adopted as text books at Pennsylvania State College, Utah Agricultural College, University of Nebraska, Washington University, New Mexico College of Agriculture, University of Colorado, Iowa State College, University of Nevada, and University of Missouri. The second impression of these books is now being issued by the publishers. Professor S. T. Harding has during the past two years prepared a text book on ''Operation and Maintenance of Irrigation Systems.'' This book is now being published by the McGraw Hill Book Company and will be ready for the beginning of the next term. These books, with a text book on ''Elements of Western Water Laws,'' written by A. E. Chandler, a former member of the department, cover the important phases of irrigation. During the last college year Professor Harding has contributed to irrigation literature by editing and supplying articles to the department of Irrigation Pumping of the Journal of Electricity.

The department offers more complete instruction in irrigation than is given in any other university or college. The demand for graduates from the College of Civil Engineering who have had the special training given by the irrigation courses has usually exceeded the number of graduates available. Graduates have been sent on irrigation projects in many of the western states. At the present time there are demands for one man in Utah, three men in Arizona, several in Nebraska and Wyoming, in addition to a number in California.

The department needs adequate office and lecture rooms. Even more pressing is the need for a joint sanitary and irrigation laboratory. The establishment and development of irrigation courses in other institutions will weaken our relative standing if class-room and draughting-room work is not supplemented with the proper amount of laboratory work. There is no state where irrigation is of greater importance than in California, and we should maintain the standing of the irrigation courses.

Jurisprudence.—The enrollment in the School of Jurisprudence has materially increased during the past year, the number of students pursuing the professional curriculum leading to the degree of Juris Doctor having been 175. Of these, 88 had received academic degrees, representing thirteen different universities. In addition to the professional students, the Department of Jurisprudence gave instruction to 859 other students, in elementary law, commercial law, Anglo-American legal institutions, Roman law, and international law. The number of J.D. diplomas issued in May, 1917, was 30, as against three in 1907.

Professor Roscoe Pound, Dean of Harvard Law School, in August, 1916, gave a course of eight lectures on ''Modern Juristic Thought and Its Significance for American Law.'' These lectures were highly appreciated, and were attended by practically the whole membership of the School of Jurisprudence as well as by many other persons. Other public lectures given during the year were delivered by William H. Hunt, Judge of the United States Circuit Court of Appeals; Henry A. Melvin, Justice of the California Supreme Court; John E. Richards, Judge of the California District Court of Appeal; Professor Henry Morse Stephens, Mr. Raymond S. Robins, Mr. O. K. Cushing, and Mr. Leonard C. Van Noppen, Queen Wilhelmina Lecturer at Columbia University.

In view of the war, a course in Military Law will be offered during the coming year.

On February 11, 1917, we sustained the loss by death of Mrs. Elizabeth Josselyn Boalt, who contributed the larger part of the cost of the construction of Boalt Hall of Law. In appreciation of the valued service rendered by Mrs. Boalt, the students of the law school passed resolutions, which have been cast in the form of a bronze tablet for erection in Boalt Hall. They also attended the funeral ceremony in memorable numbers. Mrs. Boalt's continued interest is shown in her bequest of property which is expected to yield some $200,000, and will make possible important expansion in legal instruction.

A movement is manifesting itself through the country toward the establishment of a four-year law school course. The underlying purpose in this movement is to impart a more liberal quality to the legal curriculum by including therein such subjects as Roman law, jurisprudence, comparative law, international law, and history of legal institutions. A change from a three-year course to a four-year course would, because of the studies already offered and because of the general organization of our work, be particularly easy in the School of Jurisprudence, and would involve hardly more than readjustment of courses. The subject has been under discussion for the past two years and the faculty of the school has agreed upon a general programme.

Latin.—The enrollment in the Department of Latin is practically the same as last year. During the second half-year the work of the regular staff was supplemented by Professor Gordon J. Laing of the University of Chicago, Lecturer on the Sather Foundation, who gave a course of lectures on ''Roman Religion'' in addition to certain courses in the Greek Department.

As in former years, the Latin Department issued a bulletin for the assistance of the high schools of the state. This year the publication consisted of a list of books relating to the study of Latin recommended for a high school library.

The fourth annual competition for the Richardson Latin Composition Prize brought forth seven competitors.

The Classical Association of the Pacific States has been organized during the past year, in large measure through the efforts of members of this department. Its territory covers the states of California, Nevada, Arizona, Washington, Oregon, Montana, and Idaho, and it co-operates with two of the other classical associations in publishing the ''Classical Journal.''

Mathematics.—During the first half-year an exchange was effected between Professor Haskell and Professor C. J. Keyser of Columbia University. Dr. Irwin was granted a leave of absence during the first half-year on account of illness.

The enrollment for the first half-year was 1488, 1274 students taking lower division courses, 162 upper division courses, and 52 graduate work. In the second half-year 1495 were enrolled, 1242 in the lower division, 299 in the upper division, and 44 in the graduate courses. A considerable part of the enrollment in the lower division courses is due to the mathematics requirements for the Junior Certificate. Since elementary mathematics should be taken preferably in high school rather than in the University, it may be desirable to require more mathematics units for matriculation.

Mechanical and Electrical Engineering.—The laboratories for undergraduate and graduate work in Steam Engineering, Gas Engineering, Electrical Engineering and Hydraulic Machinery, as well as the Machine Shops, have been crowded during the past year more severely than ever before. The installation of the new steam turbine and a steam boiler of small capacity, the addition of three steam engines of representative type, as well as internal combustion engines of the marine, stationary and automobile types for experimental work in the Steam and Power Laboratory, have served quite effectively to improve laboratory instruction in power engineering. The great difficulty is the lack of room in the present building for proper laboratories. The same lack of room is noticed in the draughting and design rooms and the Department Library.

The department continues to attract graduate students from other institutions in increasing numbers. The John W. Mackay, Jr., Fellowships in Electrical Engineering have, as in the past, been held by men whose advanced research work has added to the enthusiasm of all students in the advanced courses.

Plans for the coming year include the addition of a chair in Marine Engineering and Naval Architecture and also new courses in Automobile Engineering and Aeronautics, both closely allied to the present need for training in military engineering.

Military Science and Tactics.—In April, a unit of the Reserve Officers' Training Corps was established at the University of California, but it was not practicable at the close of the year to rearrange the work of the department or of the upper division students in the department so as to introduce the courses required by the War Department for such units. The announcement of courses in the department for 1917–18 will meet the requirements of the standard courses.

The work of the officers and cadets in the department has been satisfactory during the year. In 1916 the University was again assigned a place in the War Department's list of ''distinguished colleges.'' This enabled the University to name ten honor graduates of the military department for appointment as provisional second lieutenants in the Regular Army, subject to physical examination only. It also enabled the University to secure the latest model rifles for the equipment of the University Cadets. The War Department has again requested the University to designate ten honor graduates for 1917. So it is probable that there will soon be twenty graduated cadet officers holding commissions in the Regular Army as a result of the general excellent work of the University Cadets and their own particularly efficient work.

Seventeen of the cadet officers of the past year are to attend the training camp at the Presidio, some as members of the Officers' Reserve Corps and some as candidates for appointment in that corps. Many third-year cadets, now drilling as sergeants, are also enrolled. This will result in a serious shortage of cadet officers next fall.

The total number of students enrolled in the department during the year was 1643; the maximum strength of the regiment was 1475, on September 6; the minimum strength, 1254, on April 30.

Mining.—During the past academic year a number of changes have been made in the curriculum of the College of Mining whereby proper emphasis is given to the importance of the business or economic side of mining. Courses in mining economics and mine valuation serve to round out the essentially technical discussion of mining methods and mechanical equipment. The laboratories have been rearranged, inventory taken of supplies and apparatus on hand, and such additions of modern equipment made as available funds would allow.

The compressed air laboratory, as now arranged, is adequately equipped with modern machines; mine telephones connect with the Lawson Adit; work benches have been added, and it is possible for all students to familiarize themselves with the practical details of this type of mine equipment. The Lawson Adit has 300 feet of underground workings. In it, methods of breaking ground, handling of explosives, supporting excavations, and mine rescue were exemplified, and problems of ventilation, drainage, surveying, and sampling are worked out by students of the college. It offers opportunities for underground experience and instruction such as few mining colleges have. A small blast-furnace with accessories has been installed in the smelting-room, new units added to the ore dressing plant, and some improvements made in the assaying and advanced metallurgical laboratories. There is urgent need of additional equipment to the resources of this department, however, if we wish to maintain a high standard of competent, practical instruction.

The courses offered in Petroleum Engineering have attracted the attention of both students of the University and professional men. The oil industry is of increasing importance to the state, and this department of the College of Mining is deserving of all support. The present laboratory equipment is altogether inadequate.

The Berkeley Station of the United States Bureau of Mines, under the direction of Dr. L. H. Duschak, has critically investigated the direct utilization of dilute sulphur dioxide, such as is produced at smelting plants, for the manufacture of phosphate fertilizer, and also the purification of sulphur obtained by distillation of arsenical pyrites. Another vital problem received attention, through the investigation, with the co-operation of the Industrial Accident Commission of the State of California, of several fatal explosions of tanks of compressed oxygen used for autogenous welding. A detailed study of the metallurgy of mercury has just been started. The laboratory facilities and equipment have been placed at the disposal of Senior students in metallurgy during the current academic year.

The enrollment of students in the College of Mining has greatly increased. The prevailing high prices of metals and unusual mining activity presages a continuance of this condition for many years.

The student organizations within the College of Mining, the Mining Association and Petroleum Club, have been successfully managed throughout the year. Bi-weekly meetings have been held and lectures given by experienced engineers. It is the desire of the faculty to promote a more intimate relationship between students of the college, alumni, the engineering societies and the profession at large.

Oriental Languages.—In spite of the increasing importance of American business in the Orient, less interest has been shown in the language courses, although the lecture courses have continued to be well attended.

Under the direction of Mr. Kiang, extension courses in elementary Chinese have been started in San Francisco. A branch of the Chinese "Hung-tao" Society has been founded for the diffusion of Chinese thought. Mr. Kiang's generous gift of his valuable Chinese library admirably supplements the University's Oriental books.

Palaeontology.—The work of undergraduate instruction in this department has proceeded as in past years, but with increased numbers of students. The graduate research has attained its maximum accomplishment. This was true in the volume of publications presented, in scientific value of results, and in the importance of investigations in relation to practical needs of the community.

In addition to work on research, considerable time has also been given to carrying out specific plans relating to national interests in the present emergency. Professor Merriam has been engaged as Acting Chairman of the Committee on Scientific Research of the State Council of Defense, and as a member of the National Research Council. Dr. Clark is now engaged in a survey of the mollusca of the coast of California for the use of the Council of Defense in the study of available sea foods.

Philosophy.—The work of the department in its various branches has continued with success during the past academic year. The spirit of the students and of the instructing corps is admirable. Especially valuable work has been done by advanced students in the history of logic and of philosophy.

The department feels increasingly the need of a new building for its work. To the standing disadvantages of the old wooden building, there is now added the inconvenience of its new location.

There is special need, also, of a lecture room suited to the elementary work in psychology. The quality of the instruction is suffering more and more from the fact that it has to be given in some building at a distance from the Psychological Laboratory and where it is impossible to use the apparatus needed for demonstration.

There should be early provision made for work in educational psychology, in commercial psychology, and in animal psychology. These are important fields, and require the presence of persons specially trained.

The members of the department gladly offer their personal service and the equipment of the psychological laboratory for any work for which the national government may judge that there is need. Plans are now being matured for investigations which will be of practical service to the government in a number of directions.

Physical Education for Men.—The purpose of this department is to develop health and skill and to secure the by-products of honesty, loyalty, and courage.

Each entering student is classified on the basis of his physical ability, as demonstrated in a medical examination, and through physical efficiency tests. Students undeveloped in certain lines, as in agility, in swimming, or in self-defense, are assigned to work especially intended to correct their deficiencies. As soon as deficiencies are substantially overcome, students are allowed freedom to enroll in various sports in substitution for formal gymnastic drill.

The following figures suggest the extent of athletic activities among men: On November 1, 1916, 1707 were enrolled for credit in the department. For 1443 students this work was required, and for 264 it was elective. Furthermore, 137 students were enrolled as electives without receiving credit. In addition, 1087 students were participating in intramural sports, 470 in baseball, 90 in football, 54 in tennis, 433 in track, and 40 in swimming. This does not include 251 men who were training for intercollegiate athletics. These figures substantially indicate the work throughout the year, though attention should be called to the fact that in the spring there are less men in intra-mural sports, and more in intercollegiate sports.

The establishment of the present system of box lockers has caused an increase in cleanliness and a decrease in the operative expenses of the gymnasium.

A study of certain contagious diseases, comparing the number of men affected taking work in the department, and the number affected not taking work in the department, indicates that the use of the gymnasium has not proved a factor in the spread of these diseases.

Physical Education for Women.—The required work in physical education for women extending over the first two years of the student's residence at the University is largely gymnastic drill supplemented by folk-dancing during the student's second semester, and classic dancing during the student's third semester. As soon as possible, ability to play a team game should be added to the requirements, and four units of credit instead of two units should be given for the two years' work.

The department considers the coaching of student sports as university teaching, and accordingly sports, wherever possible, are coached by members of the department. While the teaching is in charge of instructors, the administration is in the hands of the students. For each sport, there is one general manager, and one special manager for each class. As there are ten sports conducted in this manner, opportunity is given for 50 student leaders.

This department co-operated in securing the passage of Senate Bill 559, providing for the physical needs of public school children. Especial emphasis has been placed on the training courses for teachers in view of the growing demand in this field.

A successful Orthopedic Clinic has been maintained in San Francisco in connection with the Medical School.

The enrollment during the past year was 2816 as compared with 2518 for the preceding year. This does not include the supervision of 1892 students engaged in athletic sports distributed as follows: Baseball, 65; basketball, 175; canoeing, 24; fencing, 90; handball, 18; hockey, 145; rowing, 140; swimming, 1050; tennis, 145; and water polo, 40; nor of 810 students reached in the following special fields: Partheneia, 160; Foot Clinic, 425; and Menstrual Clinic, 225.

The most difficult problem has been the administration of the Hearst Swimming Pool, due to the fact that it is considered dangerously cold during a large portion of the academic year. Although the pool was open only 68 days during the last year, it was used by a total of 8546 students.

Political Science.—A marked increase of enrollment in the department took place during the year. The number of students taking the elementary course in Government increased from an average of 374 for the two semesters of 1915-16, to 578. Increases in other courses were also noticeable. An average of 1128 students took the work in the various courses offered during the year, as against 720 during the preceding year. There were twenty graduate students, seven of whom were candidates for Doctor's degrees, nine candidates for Master's degrees, and six candidates for high school teachers' recommendations. For the first time in its history the department conferred the degree of Doctor of Philosophy upon two candidates.

Several changes in the personnel of the department took place. Professor David P. Barrows, who had assisted in the work of the Commission for Relief in Belgium while absent on Sabbatical leave during the second semester of the preceding year, resumed his courses in the department. Associate Professor Thomas H. Reed was granted a leave of absence for one year to become City Manager of San Jose, California. Dr. Edward Elliott, formerly lecturer in the department, became Professor of International Law and Politics at the beginning of the second semester. Doctor Ludwik Ehrlich came from Oxford, England, to become Lecturer in Political Science, and offered two new courses, an upper division course in the Public Law of European States, and a seminar in the same subject. Mr. J. R. Douglas was appointed Instructor in Political Science, and added a new course in Municipal Administration to the courses in Municipal Government already offered by the department.

Public Speaking.—During the past year the efforts of the department have been largely directed towards co-ordinating and making more efficient work which heretofore was isolated and scattered through separate and independent departments. This work of co-ordination has had three main objects: (1) the avoidance of unnecessary duplication of effort in separate but adjacent fields of study, *e.g.*, English, Music, Physical Culture; (2) the unification of these efforts so as to make them contributory to a common end; (3) the provision for more thorough and systematic instruction in a subject, the importance of which is universally acknowledged.

Though the term *Public Speaking* has been retained as a convenient designation, yet it very inadequately describes the work sought to be accomplished. It fails to emphasize, for instance, the importance attached by the department to the cultivation of the speaking voice, and the elimination of vocal defects. Nor does it throw into sufficiently strong relief the intimate relation between vocal expression and literary interpretation.

Romanic Languages.—The Department of Romanic Languages has had to cope as in the past with an unusually large enrollment of lower division students. The general result, nevertheless, has been more satisfactory this year than formerly, as the department was able to create more sections and thereby put fewer students in a single class. The aim of the department is to reduce all lower division sections to less than thirty-five students each. Former crowded conditions are greatly relieved by the completion of Wheeler Hall.

In the upper division courses the advanced work is still inadequately taken care of in both French and Spanish, owing to the lack of mature and scholarly teachers. In French the difficulties were increased by the absence for one year of Professor Chinard, who happily returned from France in January and has again taken up his valuable work as a teacher and scholar. During his absence his classes had to be taken in part by Dr. Gontard.

Miss Singleton, who had been granted leave of absence, has spent the past year in study at Columbia University. She returns next term. The place of Dr. Rose, who accepted a call to Sheffield Scientific School, will be taken by Dr. M. W. Graham, a teacher of experience. Professor Ramón Jáen of West Point is to join the faculty next year, making a most welcome addition.

The department has continued in close touch with the activities of the elementary schools and tries to keep informed in matters concerning the teaching of the Romanic languages in this state.

Sanskrit.—The Department of Sanskrit has given instruction as usual to a small but earnest group of students, and has spread some knowledge of the masterpieces of ancient Indian thought by lectures within and without the University.

Slavic Languages.—The Slavic Department has shared in the general prosperity of the University and has had by far the most successful year of its existence. The total registration for the year was 94 (35 in language courses) as compared to 56 (28 in language courses) for the previous year. The number of ''student hours'' was 263 (84 in language courses) as compared to 142 (58 in language courses) for the previous year. The general spirit of the students and the quality of the work done have been admirable.

Several of the advanced students have made written translations of plays by Ostrovsky that have never before been rendered into English. A volume containing four of these translations is to be published by Charles Scribner's Sons in New York, and will be included in the Semicentennial Publications of the University.

Zoology.—The enrollment in all courses in Zoology during the past year was 1225 as compared with 1229 in the previous year. The standards of work have been vigorously enforced, especially in the courses of the lower division. It was possible this year to reduce the size of laboratory sections in the first year's work to twenty-four students each. The addition of Professor W. W. Cort, Ph.D., University of Illinois, has greatly strengthened the elementary work. In Dr. Long's absence on Sabbatical leave the department has had the services of Dr. H. N. Gould, Ph.D., Princeton University.

During the past year there were sixteen graduate students looking forward to a Doctor's degree. Three Doctor's degrees and one Master's degree in Zoology were awarded.

Professor Holmes has published a volume of ''Studies in Animal Behavior,'' and has completed a high school text book in Zoology. Professor Daniel is now completing his study of elasmobranch fishes. Professor Long has spent his year of Sabbatical leave in intensive study in conjunction with Dr. Evans on the reproductive phenomena in mice. Professor Cort has found time to continue his study of the trematode worms, and Mr. Barrows has completed four papers now in press on Protozoa and Boring Mollusks. Professor Kofoid has finished a report on the ''Cultural Pearls of Japan'' for the United States Bureau of Fisheries and has brought nearly to completion a quarto monograph in the Tintinnoina, a group of pelagic ciliates of the Agassiz Expedition to the tropical regions, for publication by Harvard University. Some system of research professorships, whereby it might be possible for members of the University staff to be released from teaching for a period of a semester or a whole year would be a great assistance.

The biological laboratory of the State Board of Health will be placed under the direction of the department, and two half-time assistants in graduate status have been appointed to aid in carrying out this work.

The most serious need is the early establishment of a definite policy regarding the future of East Hall and the erection of a biology building on the permanent plan of the University. A second need is that of greater library facilities. Other needs are a suitable lecture room equipped for scientific use and an adequate room and a curator to care for and build up research and teaching collections.

ALUMNI SECRETARY

Berkeley, July 1, 1917.

To the President of the University,

Sir: I have the honor to submit herewith the report of the secretary of the California Alumni Association for the year ending June 30, 1917.

The forward movement of alumni organization, which was forecasted in our report of the previous year, has carried to a substantial conclusion the major purposes to which the 1915–17 alumni administration set its hand when President Oscar Sutro came into office two years ago.

Including the graduates of the present year, the University has conferred 15,277 degrees. Of these, 9896 are the Bachelor degrees, given for the completion of the regular four-year course in the Berkeley departments; the number of Master degrees conferred is 1214; the Doctors of Philosophy total 181; and the Juris Doctors, 154. The higher degrees in Architecture, Public Health, and Education total 14; the honorary graduates number 58. In the San Francisco and Los Angeles departments 3760 degrees have been conferred. The persons who have received two or more degrees from the University number 1386. Deducting this figure from 15,277, the total 13,891 is reached, representing the number of persons holding one or more degrees. With the deceased graduates numbering 910, the total number of living alumni is 12,981. As we have pointed out before, in an alumni body of 13,000 persons, at least 50 per cent should be actively enrolled in the Association. In June, 1915, there were 1302 members; in June, 1916, there were 2905; in May, 1917, there were 3328 enrolled, and there were 3857 subscribers to the "California Alumni Fortnightly." The year's increase is a gain of 14 per cent in membership and of 27 per cent in subscribers.

The pilgrimage of 800 graduates into the San Joaquin Valley for the reunion festivities and annual meeting, on Saturday, June 3, 1916, will stand as a most picturesque event in a widely active year. The resolution to hold the yearly meetings, from time to time, in one locality or another, is a step in the right direction. The sentiment of the Council, backed by its act, has done a great deal to attract the people of California to the needs for which the Association ministers and the ideals for which it strives. In addition to the Kearney Day celebration, the alumni of the bay region met at the annual football dinner in the San Francisco Commercial Club on the night of November 17, 1916, with a total attendance of more than 400. The custom, begun in 1916, of holding a banquet on Charter Day evening, was observed on March 23, 1917, at the Hotel Oakland, where more than 400 men and women met in honor of the forty-ninth birthday of the University.

The achievement of greatest importance during the year was the completion of the "Directory of Graduates." The compilation, which extended over a period of eleven months, was brought to a close in September, 1916. The printing, binding, selling, and distributing was carried on during September, October, and November. The summary of costs connected with the Directory shows that the expenses for compilation totaled $3202.57; for printing and materials, $2210.49; for sales publicity, $311.65; for mailing and distributing, $121.34; for incidental expense, $238.50; the total cost being $6084.55. Toward this expense the Regents of the University generously appropriated $3000 in 1916–17, which was used together with a balance in the earlier appropriation made by the Regents. The total sales have netted $1554.60. This figure represents more than ten times the number of books sold when the previous edition of the "Directory of Graduates" was published in 1910.

In connection with the census taking and the compiling of the Directory, a new office was adopted. The increase in the volume of business forced the alumni headquarters out of the second-floor room in California Hall into a set of offices at the south end on the lower floor of the same building. Located here within easy reach of the campus life as it moves along the main arteries, the Association has set out to make its usefulness apparent to students while they are still undergraduates.

The employment exchange, established in January, 1917, for the purpose of assisting the outgoing Seniors in their search for appropriate positions in the business and professional world, brings the alumni organization into friendly contact with the men and women prior to the time when their relations with the University are severed. In future years the graduate will remember that his initial acquaintance with the alumni office took place when it attempted to aid him in his personal advancement. Far more important than this incidental consideration is the merit of the employment enterprise and the need which it is destined to fulfill. The inquiry conducted by the Association shows that the yearly output of men and women is approximately 1000; that about 200 of these, mainly women, become teachers; that an additional 300 return for further study; and that 500 enter technical and business pursuits. Of the 1917 output, approximately 250 men and 50 women registered to participate in the alumni bureau. The Seniors registered represent prospective applicants for all branches in agriculture, chemistry, commerce, and engineering. The applicants from the general colleges are registered for such occupations as costume designing, journalism, library work, public health, social service, interior decorating, and law. To connect the applicants with prospective opportunities the assistance of the various Chamber of Commerce bodies in the State was solicited. As an instance of the response, the San Francisco Chamber of Commerce distributed a report of the survey among 10,000 business men in the city of San Francisco. Even in view of the disturbed industrial conditions which developed in the early weeks of April, the start which was made this year in setting up an agency equipped to introduce intelligently the graduating Seniors to prospective business opportunities insures success. A service branch of this character cannot fail.

The military intelligence bureau which the Association established at its campus headquarters within a few weeks after the declaration of war has developed into surprising proportions. The military census, consisting of more than 3000 names, representing men who are willing to enter the service of the nation, is a notable register of specialized ability. In circularizing the male graduates of the University for detailed statistics in connection with suitability for national service in time of war, the following figures represent the distribution of our publicity, showing an approximate division in the ages of the alumni:

Year of graduation	Number circularized	Approximate age
1900–1916	5000	23 to 39 years
1896–1900	900	39 to 53 years
Faculty	500	25 to 60 years

The returns from the above distribution total 3075 cards. These cards have been classified alphabetically according to the name of the individual and tabulated according to occupation. Every occupation in the list is well represented in the file, while the occupations registering the highest number of candidates are engineering, medicine and its various branches, agriculture, automobile driving and interpreting. The instructions of the War Department have been transmitted daily to alumni and undergraduates through the channels of the alumni office. To what extent the operations of the Association in this connection will ultimately reach can only be a matter of conjecture. The significant feature, however, is the unexpected usefulness to which the Association has risen in the strain of the national emergency.

Respectfully submitted,

HARVEY RONEY,
Secretary.

APPOINTMENT SECRETARY

BERKELEY, July 1, 1917.

To the President of the University,

SIR: I have the honor to submit herewith my report, covering the period from July 1, 1916, to July 1, 1917.

Number of candidates for teachers' positions registered	1,538
Number of calls for teachers	1,577
Sets of recommendations sent out	4,685
Letters sent out	16,008

Respectfully submitted,

MAY L. CHENEY,
Appointment Secretary.

CALIFORNIA SCHOOL OF FINE ARTS

July 1, 1917.

To the President of the University,

SIR: I have the honor to present the following report of the California School of Fine Arts (San Francisco Institute of Art) for the year 1916–17.

This year has marked a decided increase in the activities of the School and its influence in the art life of the community. A concerted effort to broaden the scope of the School along many lines has met with encouraging results in the augmented enthusiasm apparent in all the various branches.

An important element contributing toward this result has been the extensive refitting and redecoration of the classrooms and galleries of the School, authorized by the Board of Directors of the Art Association. This includes the installation of a new heating system, highly improved lighting arrangements, and the addition of several new classrooms to accommodate a greatly increased attendance.

A high standard has been maintained throughout the School. In the Fine Arts Department, the courses have been designed to offer a training that will not only hold to purest art ideals but will also give the student a sure and thorough grounding in fundamental principles, as well as an intelligent understanding of the technical requirements of painting and sculpture.

In harmony with the important movement to foster better taste, and to bring real art into the ordinary things of daily life, the Department of Arts and Crafts, Design and Commercial Art has been strengthened. Most valuable and practical courses in Interior Decoration and Historical Costume, with special courses in Decorative Design, have been added to the already extensive curriculum.

The Night School has been enlarged by the addition of courses in Sculpture, Interior Decoration, and Commercial Art. These have attracted many students unable to profit by the day classes.

This growth has necessitated a larger teaching staff, which, at present, numbers fourteen.

An exhibition of work of students of the School has been maintained in the Fine Arts Palace Museum, and has given the public direct knowledge of the School's activities.

The numerous scholarships, granted by the Art Association to deserving students otherwise unable to avail themselves of the opportunities offered by the School, have been continued.

The Summer Session was largely attended by students from all parts of California and from adjacent states.

Respectfully submitted,

LEE F. RANDOLPH,
Director.

COLLEGE OF DENTISTRY

San Francisco, July 1, 1917.

To the President of the University,

Sir: I have the honor to present the following report of the Dental School for the year 1916–17.

The year was marked by a large registration. Ninety first-year students filed applications, of whom eighty-three were regularly enrolled. The erection of an addition to the old building, completed October 15, 1916, provided ample space for all classes and the courses partly disorganized in the first semester were efficiently carried on during the second semester in the more commodious and conveniently arranged new building. The type of new equipment placed in the dental infirmary and laboratories is not surpassed in any dental school in this country. The clinical work is carried on by the students after the plan followed in private practice, subject to regular instruction, inspection, and audit, so that the graduate has had thorough training in practice building during his residence in the University. The annual reports of the clinic show conclusively that both the quality and quantity of work done by the students is greatly improved. Provision has been made for maintenance and replacement of equipment by charging minimum depreciation fees.

The Fourth Annual Dental Institute was successfully conducted in Los Angeles, San Francisco, Portland, and Seattle from December 27, 1916, to January 16, 1917, being under the direction of the Dental School in California. Dr. Frederick Bogue Noyes, Professor of Orthodontia and Dental Histology in the College of Dentistry, University of Illinois, lectured on the elation of dental histology to dental practice. More than two undred dentists from all parts of the State were in attendance t these sessions.

The following gifts have been received from members of the dental profession: $300 from the California State Dental Asso-iation, to be applied toward the payment of the salary of a Research Assistant in Dental Pathology and Bacteriology; $307 from members of the profession for the purchase of apparatus for grinding and sectioning hard tissues (viz., teeth and bone) o assist Dr. John S. Marshall in pursuing further investigations n the research laboratories in the Department of Anatomy; $150 from the California Alumni Chapter Xi Psi Phi Fraternity as a loan fund for deserving Senior students. In addition Dr. John A. Marshall received a grant of $300 from the Research Institute of the National Dental Association to continue his researches on the saliva. Numerous gifts of books, including Fitch, "System of Dental Surgery," 1829, Harbert, "Dental Surgery," 1847, and early dental journals from Dr. E. L. Townsend, Los Angeles, and journals to complete files from Dr. Wm. Bebb, Northwestern University Dental, transparencies from Dr. Robert Dunn, San Francisco, and models from alumni have been received for the library and museum.

The major work carried on in our research laboratories by Adah Roberta Holmes, B.S., M.S., under the able direction of Dr. K. F. Meyer, for the College of Dentistry and the California State Dental Association, was an investigation on disinfection in dental practice, a report of which was presented to the Association at its annual meeting, June 6–9, 1917. The investigation will be continued during the coming year.

Various members of the faculty have continued to give lectures in the public schools, and before lay audiences on mouth hygiene, which is the greatest factor in preventive dentistry today, and the facilities of the department, including stereopticon slides, cinematograph films, models, and charts, have been placed at the disposal of all who choose to make use of them in this propaganda. At the request of the vocational guidance instructors in the Girls' High School and the Polytechnic High School in

San Francisco, lectures have been given on dentistry as a vocation.

Beginning with the next regular session the four-year course of study will be inaugurated. This permits of the addition of fundamental studies in medical and dental science and gives more time for the elaboration of the advanced courses. While a decrease in enrollment is expected, present indications are that it will not be materially lessened on account of the great public demand for good dental service.

The school has offered its building and equipment, together with the services of its faculty and student body, to the Federal Government for the purpose of putting the mouths of soldiers and recruits, who might be rejected because of oral conditions, in good condition, provided the cost of materials and maintenance would be met by the Government or the Red Cross. An advice from Colonel J. C. Kean, Director General of the Red Cross, states that he has recommended the acceptance of the offer to the Adjutant General and that the San Francisco Chapter furnish the funds. The matter is now pending, but if accepted it will enable this department to render a very efficient service to the Government during this crisis, and at the same time maintain a reserve of trained dentists to meet the demands of the Government and the civilian population in the future.

Respectfully submitted,

GUY S. MILLBERRY,
Dean.

EXAMINER OF SCHOOLS

BERKELEY, July 1, 1917.

To the President of the University,

SIR: As Examiner of Schools, I have the honor to submit herewith my report for the year 1916–17.

The work of the Examiner of Schools for the year has fallen within the lines of the previous year, and may still be summed up, in the main, under the headings formerly given: (*a*) personal work in the field, as examiner and visitor of schools; (*b*) as chairman of the Committee on Schools, a general responsibility for the direction of the committee's activities, and, with the Committee, general charge of the visiting of schools by members of the Committee and the annually appointed assistants in this work; (*c*) statistical study of the scholarship records of the freshman class; (*d*) official correspondence. A brief account of the work under these headings follows.

(*a*) The Examiner spent in person the usual time—January to June—in the field, inspecting schools and conferring with school boards. In this connection a considerable number of public addresses were delivered in the interests of various phases of secondary education. The calls for this work grow more numerous yearly. In addition, several commencement addresses were delivered, and at least six similar calls had to be declined because of conflict with other duties.

Each year the Examiner is more and more forcibly impressed with the impossibility of covering the field of general school inspection by one officer. Please see report of last year for data on the growth and expansion of the secondary schools of the State. With this situation in view, the Examiner begs to call attention again to the recommendation of last year, heartily seconded by the Committee on Schools, that measures be taken immediately for the appointment of an Assistant Examiner of Schools. The situation seems to warrant and excuse further insistence now on this need.

In the institution of accrediting, the University has a unique opportunity to extend its influence for better standards of work, higher ideals of secondary education, and closer mutual understanding between the two great branches of the State's educational system. The Committee on Schools feels keenly that the University is not measuring up to the opportunities in this field; that it is in real danger of losing the leadership which it should in some measure assume in all educational movements; that the provision now made for keeping up an intelligent and sympathetic contact between the schools and the University is, particularly in view of the great growth of secondard education in the past dozen years, utterly inadequate. Some details of this growth are set forth in the report of last year. Moreover, to make our task more difficult and render our present provision relatively still less adequate, a new type of secondary schools has recently come to the fore in large numbers and is asking for University inspection and recognition. The reference is to the evening high schools, which the state law has recently recognized as regular high schools. The enrollment of pupils in these schools is already over 20,000 and is rapidly growing. Schools of this type present peculiar difficulties from the point of view of accrediting. The University is, however, in its published statement, committed to the task of visiting and reporting upon these schools also, now that they are a regular branch of the State system. In view of the above, it is earnestly hoped that provision for doing more adequately the work we have in hand may be made before another year.

In another respect the Examiner and the Committee on Schools believe that this feature of the University's work with schools can be made far more valuable than it now is, to the schools and the University as well.

Thus, we feel that the members of the committee and the various special assistants sent out annually should each be definitely commissioned to visit especially the work of the school which is most closely allied to his own University work. Since we now no longer accredit by subjects, there is no longer any reason why this may not be done. In such case the visitor should be instructed to go out with the purpose of getting acquainted with conditions as they are, with a purpose of promoting mutual understanding and an atmosphere of sympathetic co-operation. It goes without saying that it is not possible for a man to do this in a field or department in which he has but a fleeting and superficial interest. Moreover, a man whose attention in the University is centered mainly in one *Fach* cannot be expected to be necessarily a good judge and a constructive critic of the whole school. Again, with the general and widespread inrush of new subjects into the secondary schools, in response to social unrest and dissatisfaction with the traditional subjects and methods, there is imminent danger that the older and by many still valued subjects, with their fairly definite aims and methods, may be either quite abandoned or at least greatly neglected in the universal clamor for immediately practical subjects. Many of these latter subjects are as school material only in the making; in them there is neither recognized subject matter nor any agreement as to aims or methods. But such subjects are with us in ever-increasing numbers and with steadily-growing popularity. How to preserve and improve the good which we believe the old contain, and at the same time meet intelligibly and educationally the call for the new, are tasks which will within the next decade tax all the educational resources of the State. It is neither right nor expedient that the University should stand aside chiefly as a spectator in this greatest of movements for the adjustment of educational practices to social ideals; far rather should the University in this field, too, assume the attitude of willing and intelligent service.

(*b*) This year the visiting of the junior colleges was continued under direction of the Committee on Schools. The committee is of the opinion, in which the University Examiner, Dr. Woods, concurs, that with our visiting of the past two years we have now a very fair idea of the present condition, performance, and immediate purposes of these new institutions, and that the visiting of them in the coming year need not be so comprehensive as it has been in the two past years.

It was unfortunate that the appropriation for the visiting of schools and junior colleges was inadequate this year, and nearly forty secondary schools had to be omitted, for lack of funds. This caused a good deal of dissatisfaction and complaint, and in some cases evident hardship.

(*c*) Owing to the greatly increased cost of publication, it has been thought best not to issue the statistical report of the Examiner this year. The data, however, in so far as they are available, are in hand and are being worked over. The present plan is to get the report ready and print it next year with the report for that year. There is a great and widespread interest in this feature of the Examiner's report, and it is hoped that it can be issued in detail at least every two years.

(*d*) In view of the extensive and increasing correspondence connected with the work of the Examiner and the many records to be cared for, including those of the Committee on Schools, the Examiner begs to call attention again to the urgent need of a special office for the Examiner of Schools.

In February the Examiner attended, as the representative of the University, the annual meeting of the National Association of High School Inspectors, which was held in Kansas City, Missouri. He delivered an address on ''Methods of Testing High Schools.'' The meeting was a very valuable one, and it is to be hoped that the Examiner may be enabled to attend each future annual meeting.

Respectfully submitted,

W. SCOTT THOMAS,
Examiner of Schools.

UNIVERSITY EXAMINER

July 1, 1917.

To the President of the University,

SIR: The work of the University Examiner has been chiefly along two lines: (1) the supervision of the rating in the Recorder's office of credentials of all students who apply for admission to the University from other than accredited California high schools; (2) the development of a basis of rating with other institutions of collegiate grade, particularly with the normal schools and with the junior colleges. With reference to the first division, it may be interesting to note that during the year ending October 1, 1917, approximately fifteen hundred applications for admission were received from persons other than graduates of accredited California high schools. Of these about eight hundred eventually registered as students. A proper determination of their status involves the study of credentials from institutions of varied types. An estimate of the value toward the Bachelor's degree of work done in normal schools, library training schools, colleges of osteopathy, training schools for nurses, art institutes, etc., requires accurate sources of information and careful attention to detail. The results obtained frequently merely approximate the truth. Duties in connection with the admission of such students touch the functions of a number of committees, including the Committee on Credentials, the Committee on Schools, the Committee on Admissions, the Committee on Entrance Examinations. The University Examiner is *ex-officio* a member of each of these committees.

Two of the most interesting tasks of the past year have been: (1) a visit by the Examiner to all the normal schools in the State giving the regular course for grammar school teachers, and (2) the visiting of the junior colleges and a study of their problems. The first has resulted in an affirmation of the University's policy of allowing from 32 to 48 units advanced standing toward the Bachelor's degree for graduation from a State normal school in addition to the allowance made toward the high school teacher's certificate of one-half year of graduate work. The second has revealed three important problems that appear to be common to most junior colleges: (1) the junior college teacher is usually somewhat overworked; instead of having the number of hours of instruction reduced when he undertakes collegiate courses he frequently has the number increased, and in view of the character of the work this is most unfortunate; (2) there is difficulty in obtaining for the junior colleges teachers who are specialists in their subjects and who are vitally interested in them; (3) there is a problem of meeting local needs by courses especially designed to that end.

One of the tasks contemplated for the coming year is the establishment of a set of minimum requirements for the approval of any junior college. In view of the large number of requests for guidance made of the University this procedure seems to be highly desirable.

Respectfully submitted,

B. M. Woods,
University Examiner.

UNIVERSITY EXTENSION DIVISION

Berkeley, July 1, 1917.

To the President of the University,

Sir: I have the honor of presenting herewith the fourth annual report of the University Extension Division.

Within the past year, through this Division, 8074 persons received systematic instruction in academic courses. Three thousand three hundred and twenty-nine of these were enrolled in University Extension classes. Five thousand seven hundred and forty-five, 2581 of whom enrolled within the year, received instruction through correspondence courses. In addition to the number thus receiving instruction in the more systematic manner, 79,760 attended lectures given by this Division. About 30,000 persons were present at the debating contests conducted by the Bureau of Public Discussion through the Interscholastic Public Speaking League. Six hundred and fifteen thousand one hundred and fifty is the estimated aggregate of those who profited by the material made available to the schools and the general public of the State through the Bureau of Visual Instruction. Aggregate numbers of courses involve duplication, but, when due allowance for such duplication is made, it will be seen that the total number of persons served by this Division within the past year runs up into many thousands.

Following the plan heretofore adopted in reporting the work of this Division, I present separate statements covering the activities of each bureau.

Bureau of Class Instruction

Classes and Enrollments.—Within the year this bureau conducted 311 classes with a total enrollment of 5014. Two hundred and sixteen of these classes met in San Francisco, 76 in Oakland, 10 in San Jose, and 9 in other cities of the State. Sixty-eight courses were given and 57 instructors employed. Of the 3329 persons enrolled, 2171 were men and 1158 were women. Only 380 failed to complete the work for which they enrolled. The percentage of attendance was approximately 83.

Following is the enrollment by general subjects:

Business	1,956
English	591
Modern Languages	600
Mathematics	163
Technical	1,198
Miscellaneous	596
	5,104

Ninety enrollments are duplicated in shorthand and typewriting, thus making the total enrollment for the year, as previously stated, namely, 5014. Two thousand six hundred and seventy persons who did not enroll made inquiry concerning instruction.

Special Courses.—Several special courses were offered within the year. The course in Interior Decoration by Mr. Sumner Robinson of New York, for the furniture dealers and drapers of San Francisco and Los Angeles; a class in Salesmanship for business men and women of San Jose, conducted by Mr. James Lynch, Pacific Coast Manager of the Herring-Hall-Marvin Safe Company of San Francisco; and the course in Speech Correction given by Mrs. Mabel Farrington Gifford, Director of Speech Correction in the public schools of San Francisco, deserve special mention. The policy of appointing special instructors for special classes, as, for instance, business men for business courses, has proved successful. We are thus able to utilize the practical experience of men of affairs who at the same time are academically qualified to give instruction.

Accommodations for Classes.—Forty-one rooms were used for extension classes, twenty-three in San Francisco. Through the generosity of Mr. Rudolph Spreckels we had the use, for a small rental, of an office room and three class rooms in the Lick Building, a building well located for our purposes, but ill adapted to class-room instruction. Three rooms of the Hastings College of the Law, the City Hall, San Francisco, the auditorium of the Phelan Building, room 19 of the Ferry Building, a class room in the Affiliated Colleges, seven rooms in the Polytechnic High School, four rooms in the High School of Commerce, one in the Girls' High School, and one in the Cogswell Polytechnic College, were also used for classes. The courses taken by the American Institute of Banking were given in their own rooms, 126 Post Street. Classes in Business English for men and women employed in the General Electric Company met in the offices of the company; the class in Commercial Law, for the members of the Chamber of Commerce, in the Chamber of Commerce Building. In Oakland classes met in the Technical High School, the Vocational High School, the Museum, and the Clearing House.

This bureau needs large accommodations in the central part of San Francisco and in the central part of Oakland. Widely scattered classes increase, of course, the difficulties of administration. It will never be possible or desirable, however, to centralize all the work of the bureau. Still, the general administrative work in San Francisco may and should be centralized in offices equipped and furnished in a manner befitting the character of the work. Adjoining these offices there should be at least a dozen well-equipped class rooms for such classes as cannot be advantageously conducted elsewhere. There should also be a large lecture hall. It would be possible with such a hall to provide lectures throughout the year. Without suitable accommodations it will always be impossible to conduct the work of this bureau in the most satisfactory manner.

Classes in Technical Subjects.—The total number of enrollments in technical classes in the past year was 1162, approximately twice that of the previous year. Eighty classes in twelve subjects were conducted. These classes met in San Francisco, Oakland, San Jose, Stockton, and Sacramento. The subjects taught were Art Metal Work, Automobile Technology, Chemistry, Electricity, Machine Shop Practice, Mechanics, and Reinforced Concrete Construction.

In conducting classes in technical subjects we have had the co-operation of the Boards of Education in several cities, Cogswell College in San Francisco, the Pacific Gas and Electric Company in Sacramento, the Chevrolet Motor Car Company in Oakland, and a number of automobile firms in San Jose. In the last named city the school authorities purchased a considerable amount of technical apparatus to facilitate the University Extension instruction.

In San Jose and Sacramento the method of combining class instruction with correspondence instruction was employed. Classes met once in two weeks. This method promises to be effective in providing instruction for groups in the more distant parts of the State.

The number of instructors in technical subjects was twenty-three, of whom three were University instructors, ten engineers (electrical, mechanical, or chemical) engaged in commercial practice, and the remainder high school instructors, five being heads of departments.

The chief difficulties in conducting these classes are lack of equipment and of suitable rooms for classes, particularly in the downtown district of San Francisco. Notwithstanding the difficulties, this phase of the work, under the supervision of Assistant Professor Howard H. Bliss, has developed rapidly.

BUREAU OF CORRESPONDENCE INSTRUCTION

General Statistics.—During the year this bureau received 2000 paid enrollments, 442 enrollments of prisoners in the State penitentiaries, and 139 enrollments from inmates of the United States Disciplinary Barracks on Alcatraz Island, making a total of 2581 enrollments. These were made by 2397 persons. The total number of enrollments received since the organization of the bureau is 8175. During the year instruction was given by correspondence to 5745 persons.

One thousand six hundred and four enrollments were by persons in California. All the counties of California save Alpine and Lassen were represented. Two hundred and thirty-seven enrollments were received from thirty-seven other states and territories of the United States, and four from three foreign countries. Of the persons who enrolled only 1615 gave information concerning their previous education. Nine hundred and forty-four of these—considerably over fifty per cent—had not more than a secondary education. Approximately twenty per cent had only a grammar school education. It is clear that the majority of those who seek the service of University Extension are people who have grown to mature years without the benefit of higher education. A large majority of Extension students are men and women from 20 to 35 years of age. The largest demand for correspondence instruction comes from people actively engaged in business and industrial pursuits who desire instruction for practical purposes.

The subjects of instruction for which students enrolled, and the number of enrollments in each subject are as follows: Accounting, 180; Advertising, 38; Architecture, 6; Art, 5; Astronomy, 8; Biology, 19; Business Management, 11; Commercial Law, 43; Economics, 15; Education, 93; Electrical Engineering, 37; English Composition, 510; English Literature, 69; Freehand Drawing, 42; French, 47; German, 20; History, 35; Home Economics, 60; Home Sanitation and Disease Prevention, 3; Hydraulics, 7; Italian, 14; Journalism, 40; Latin, 6; Mechanics, 21; Mathematics, 269; Mechanical and Instrumental Drawing, 44; Music, 50; Play and Playground Supervision, 4; Penmanship, 4; Philosophy, 51; Polish, 1; Political Science, 34; Russian, 4; Salesmanship, 20; Spanish, 113; Spanish Stenography, 1; Stenography, 46; Typewriting, 16; Zoology, 4. It will be noted that the predominant demand is for courses in English composition, and in business and industrial subjects.

Objects of Students.—One thousand seven hundred and thirty-seven persons who enrolled and paid fees for correspondence courses specified the purposes they had in mind in seeking such instruction. Nine hundred and twenty-one enrolled for "Vocational advancement"; 363 for "Credit toward a degree"; 453 for "Culture."

Occupations of Students.—The occupations of persons seeking correspondence courses may be indicated as follows:

Agriculture	69	Nurses	10
Artists	3	Pastors	9
Barbers	2	Printers	5
Chemists	8	Professional	41
Clerical	395	Sailors	6
Contractors	1	Salesmen	50
Foresters	2	Social workers	2
Housewives—domestics	193	Soldiers	7
Industrial	3	Students	76
Literary	15	Teachers	378
Manufacturers	1	Tailors	2
Merchants	14	Technical and Mechanical	128
Musicians	7		

The Needs of the Bureau.—The first need of this bureau is for more persons on our instructional staff willing to study the needs of correspondence instruction and competent to meet those needs as they are determined. Correspondence instruction tests the art of the teacher in the highest degree. As compared with the class method, it is new and its advantages are not fully realized. The features of emulation, personal contact, and association in class, which make the class method apparently superior, are wanting in correspondence instruction. The correspondence method, on the other hand, requires more thorough application and study of the subject by the individual student, puts to test his willingness to work, arouses his permanent interest, and gives immediate opportunity for the application of what he learns to the business or industry in which he is engaged. These advantages tend to offset the disadvantages of correspondence instruction, but this fact is not clearly grasped by the majority of instructors, who are accustomed to think in terms of class instruction only. Hence there is need of employing and developing persons competent to carry on correspondence instruction.

Another need of this bureau is more good correspondence courses. Of the 200 courses now offered, not more than a dozen are prepared with sufficient care and detail, or with the needs of the average correspondence student in view in sufficient degree to make them worthy of our endorsement. Merely to refer people to text books, to tell them what parts of the text to study, and then to ask a few questions as the basis for a written report, are not sufficient. Certain of our courses, as, for instance, some by Professor Bliss in electricity, one under preparation by Mr. Nash on playgrounds, and one in business English now being developed by Dr. Smithson, approximate the standard at which we aim.

BUREAU OF LECTURES

During the past year the work of this bureau has been carried on as heretofore, without a secretary. Forty-one lecture courses were provided and twenty-nine lecturers were employed. The courses included 254 lectures. The average attendance was 11,045, the aggregate attendance, 61,925. In addition to lectures in courses 100 single lectures were given by twenty-three lecturers. The aggregate attendance upon these single lectures was 17,835. Thus the total number of lectures provided within the year by this bureau was 354, with an aggregate attendance of 79,760.

BUREAU OF PUBLIC DISCUSSION

This bureau devoted its attention during the past year to the supervision of the Interscholastic Public Speaking League of California. The following statement appearing in the Third Annual Report of the Secretary of the Bureau, published in May, 1917, shows the extent of the League's activities: "The membership of the League includes eighty-four high schools representing a total enrollment of approximately 40,000 students. During this, the third year of the League's existence, 170 contests have been held throughout the State. These were attended by nearly 30,000 people. Over 1200 high school students have engaged in these contests, either as members of teams, as alternates, or as participants in tryouts."

The bureau has published the following bulletins within the year: Constitution and Rules and Regulations, Interscholastic Public Speaking League of California, 1917–18; Third Annual

Report, Interscholastic Public Speaking League of California, 1916–17; Compulsory Health Insurance; League to Enforce Peace; Single Tax; Military Service; Manufacture of Munitions of War; and Single House Legislature. Each of the six bulletins last named contains a general statement and a list of references relating to one of the subjects to be discussed in the contests of the League during the year 1917–18.

The bureau can well increase its services by encouraging the discussion of public questions in the elementary and intermediate schools of the State. Provisions will be made during the coming year for conducting an Essay and Declamation Contest throughout the State in which students under the age of fifteen may compete.

The services of the bureau should not be confined to those who are attending the public schools. Much can be done in the way of organizing discussion societies throughout the State. Plans have already been considered for co-operation of the State Library and the Bureau of Public Discussion to promote the organization of such societies in connection with the branches of the County Free Library system. The bureau is also perfecting a plan for co-operation with the men's and women's clubs of the State with a view to encouraging and directing a more general discussion of present-day problems among the members of these organizations.

Bureaus of Information and Municipal Research

The work of these bureaus was distributed among the others, and no statistical account was kept of the services rendered. The reorganization we had hoped to make, particularly of the Bureau of Municipal Research must be delayed in the first place until funds can be obtained to employ a competent secretary, and in the second place until a plan can be agreed upon whereby we can co-operate effectively with the Department of Political Science and the League of California Municipalities. When other demands upon this Division are supplied, or become less pressing, we hope to raise the Bureau of Municipal Reference to its proper place as co-ordinate with the other bureaus of the Division.

BUREAU OF VISUAL INSTRUCTION

The purpose of this bureau is to organize and circulate visual aids to instruction. In general the visual aids used thus far have consisted of stereopticon slides, motion picture reels, and exhibits. The material at present available and its use may be summarized as follows:

FREE SLIDES

Sets	35	
Number of slides	1,630	
Total number of times used	217	
Approximate number of spectators, based on an average attendance of 150		32,550
Number of schools, libraries, etc., reached		76
Approximate value of slides		$652.00

PAY SLIDES ($2.00 a set for two days of use)

Sets	32	
Number of slides	1,543	
Total number of times used	130	
Approximate number of spectators, based on an average attendance of 150		19,500
Number of schools, libraries, etc., reached		42
Approximate value of pay slides		$671.65

CURRENT EVENTS ($2.00 a set per use). New every month.

Sets	44	
Number of slides	1,672	
Total number of times used	380	
Approximate number of spectators, based on an average attendance of 150		57,000
Number of schools, libraries, etc., reached		62
Approximate value of Current Events slides		$1,200.00

FREE FILMS

Number of reels	74	
Total number of times used	744	
Number of schools, libraries, etc., reached		226
Approximate number of spectators, based on an average attendance of 150		111,600
Approximate value of free films ($100 per reel value)		$7,400.00

PAY FILMS ($1.00 a reel for each day of use)

Number of reels	163	
Total number of times used	228	
Number of schools and libraries reached		55
Approximate value of films		$16,000.00

EXHIBITS

Exhibits completed, or nearing completion (inclusive of ten destroyed at the California State Fair at Sacramento, 1916)	99
(Each exhibit remains two weeks as the single exhibit in a school. No charge is made for the use of exhibits.)	
Number of schools using exhibits	137
Number of weeks of exhibit use	1,578
Number seeing and studying exhibits—approximately 250 per school use	394,500
Approximate value of exhibits and descriptive material	$50,000.00

The organization and circulation of Traveling Industrial Exhibits is a step in advance of visual instruction work in other states. The first few exhibits, prepared a year and a half ago as an experiment, met such an enthusiastic reception in the schools—principally in Oakland and Berkeley—in which they were placed, that it was decided to increase the number to include as many subjects and schools as possible. The following subjects have been covered in the ninety-nine exhibits organized thus far:

Coffee and tea
Electrical socket appliances
Flash lights
Shoes
Flour and cereals
Yeast
Optical goods
Printing and book binding
Canning industry
Candy
Structural steel
Butter and cheese
Express business
Ventilation
Evaporated milk
Knitting industry
Evolution of the typewriter
Manufacture of fountain pens
Manufacture of vitreous ware
Talking machine
Beet sugar
Yosemite National Park
Explosives
Tractors
Water transportation
Baking industry
Electric ranges
Plumbers' iron enamel ware
Sales management
Milk

Microscope, projection machine
Shredded wheat biscuit
Olive oil
Seeds
Milk clarifier and separator
Overalls
First aid
Telephone
Automobile tire
Paint
Stoves
Mattresses
Mazda lamps
Oil
Textiles
Lithography
Salt
Mechanical bookkeeping
Telegraph and cables
Rope
Graphite and pencils
Safty first
Storage battery
Carborundum
Rubber industry
Petroleum
Manufacture and use of vacuum cleaner
Manufacture of silk
Plows
Laundry organization
Watch manufacturing
Spice manufacturing
Interior decoration
Prevention of accidents and sickness
Self-playing piano
Manufacture of roofing
Cured meats

A fairly continuous service has been conducted in 137 schools during the term just closed, a new type of visual instruction work has been inaugurated and thousands of school children, many of whom will pass immediately into industry, have studied the essential facts and methods underlying the different occupations. The exhibits of the bureau, while they cannot furnish well-rounded instruction on any of the subjects covered, nevertheless introduce information and awaken interest which must precede intelligent choice of occupation.

FINANCIAL REPORT

Receipts and expenditures for the year were as follows:

RECEIPTS

State appropriation	$20,000.00	
Class instruction	22,303.10	
Correspondence instruction	9,859.45	
Public discussion	244.00	
Visual instruction	2,046.28	
Stenographic services	61.35	
Lectures	4,228.85	
	$58,743.03	
Less refunds, etc.	668.58	$58,074.45

EXPENDITURES

General expenses	$ 9,730.31	
Equipment	520.37	
Salaries and assistance	39,873.50	
Balance, 1915–16	6,389.57	
		$56,513.75
Excess of receipts over expenditures		$ 1,560.70

This summary report will sufficiently indicate the extent and rapid growth of the work of this Division. We are well aware that only a beginning has been made. The possibilities of social service through university extension are, as we see them, so vast that present achievements seem small in comparison. Still, one may take pride in the fact that, in spite of many difficulties, a good beginning has been made.

Respectfully submitted,

I. W. HOWERTH,
Director.

GRADUATE DIVISION

July 1, 1917.

To the President of the University,

SIR: I have the honor of presenting my report on the Graduate Division for the academic year 1916–17.

Graduate Council.—After prolonged study of various plans proposed for the organization of the Graduate Division by proper definition of the membership and functions of the Graduate Council, a standing committee of the Academic Senate erected in 1915–16 simultaneously with the Councils of Letters and Science, of Engineering, and of Agriculture, the Academic Senate has taken action in a manner which promises to assure the maintenance of high standards in the graduate activities of the University and development of close relation of its diverse graduate interests. The functions which the Graduate Council is to exercise are designated as "administrative and co-ordinating."

The membership includes the President of the University (chairman), the Dean of the Graduate Division (vice-chairman), the Recorder of the Faculties (secretary), the Dean of the Faculties, the Dean of the Summer Session, and eighteen other members to be appointed by the President. The appointed members are to be so chosen as to give adequate representation to the larger divisions of graduate study associated with the degrees M.A. and Ph.D., as well as to Engineering, Agriculture, and the Schools of Architecture, Education, Jurisprudence, and Medicine.

The Graduate Council is charged with these duties:

To co-ordinate the procedure of the various colleges and schools of the University in so far as these relate to the conferring of degrees higher than the Bachelor's degree.

To grant certificates of admission to qualified applicants for graduate status.

To admit qualified students to candidacy for degrees to be conferred on graduates and to candidacy for the recommendation for the high school teacher's certificate on the recommendation of departments concerned.

To award graduate fellowships and scholarships.

To appoint sub-committees in charge of candidates' studies, who shall certify for every candidate before he shall be recommended for a higher degree that he has fulfilled the requirements of the University pertaining to that degree.

To make the final report to the respective faculties concerning the conferring of degrees and recommendations for the high school teacher's certificates on graduate students.

To make rules governing the form of presentation, publication, and disposal of theses.

To supervise the conduct of public and other examinations for higher degrees.

To administer in other ways the work of the Graduate Division with the view to the promotion of research and learning.

To report to the Academic Senate on all matters pertaining to the Graduate Division.

All additional functions previously exercised by the Committee on Higher Degrees revert to the Graduate Council, and the existing rules of the Committee on Higher Degrees shall govern the procedure of the Graduate Council. Among such additional duties are the recommendation of the Faculty Research Lecturer to the Senate and of the Hitchcock Lecturer to the President, and the consideration of matters relating to the Association of American Universities, including the nomination of delegates to the annual meetings.

Attendance.—The total registration of graduate students for the last three successive years was 832, 1014, 1092, including 21 23, 16, admitted to study in absence. This increase of nearly 8 per cent for last year is considerably below the increases of the wo preceding years, which averaged 22 per cent. Of the 811, 991, 1076 resident students, 59, 52, 55 either failed to file study-cards or withdrew. The remaining 752, 939, 1021 were distributed as follows:

PROFESSIONAL SCHOOLS AND COLLEGES—	1914–15	1915–16	1916–17
Agriculture (all subdivisions)	43	75	63
Architecture	19	19	18
Chemistry (including students in other colleges with major subject chemistry)	39	44	43
Commerce (including students in other colleges with major subject economics)	46	54	65
Education (not including students in the School of Education with a first major in other subjects)	48	53	93
Engineering	17	15	13
Jurisprudence	65	95	88
Medicine (students who take the first or second year at Berkeley in graduate standing)	27	28	37
Total	304	383	420
Percentage	40.4	40.8	41.1

MODERN AND ANCIENT LANGUAGES AND LITERATURES—			
English	55	100	101
German	41	39	46
Greek	4	4	3
Latin	29	29	30
Oriental Languages	2	2	2
Romanic Languages	50	46	45
Semitic Languages	4	5	1
Slavic Languages	1	3	4
Total	186	228	232
Percentage	24.7	24.3	22.6

NATURAL AND ALLIED SCIENCES—	1914–15	1915–16	1916–17
Anatomy	4	2	4
Anthropology	1	6	5
Astronomy	8	8	7
Biochemistry (Physiological Chemistry 1915–16 and included under Physiology 1914–15)	....	5	7
Botany	16	12	18
Geography	3	4	4
Geology	2	8	10
Hygiene	6	7	6
Mathematics	30	23	40
Mineralogy	2	1	2
Palaeontology	7	3	3
Pathology and Bacteriology	2	8	3
Physics	16	25	24
Physiology	7	11	8
Public Health	....	3	7
Zoology	23	29	21
Total	127	155	169
Percentage	16.9	16.5	16.5

OTHER SUBJECTS—	1914–15	1915–16	1916–17
Household Art and Science	12	33	30
Drawing and Art	11	10	13
History	58	69	81
Music	1	5	3
Philosophy	24	27	31
Psychology		7	6
Physical Education	6	9	9
Political Science	23	13	16
Public Speaking	....	....	11
Total	135	173	200
Percentage	18.0	18.4	19.5

As heretofore, the percentage of graduate students in each of the foregoing groups has remained practically stationary. In the group of professional schools steady increases have taken place in Commerce, Medicine, and particularly in Education, vhile Agriculture and Jurisprudence show a slight decrease. mong the modern and ancient languages and literatures, the nost significant changes were referred to last year. Since then he total number as well as the distribution of students in the lifferent subjects has remained practically the same. The same s true of the group of Natural and Allied Sciences, except that Botany and Mathematics have recovered previous losses. Geology nd Public Health show new gains. Pathology and Zoology have lost their gains of the preceding year. In the last group, including various subjects, the most noticeable feature is the marked and continuous rise of History and the appearance of Public Speaking as a separate department, with eleven graduate students. Philosophy (including Psychology) has continued to gain.

The percentage of women has steadily increased since 1913–14, as shown by the following figures:

	1913–14	1914–15	1915–16	1916–17
Percentage	42.9	44.8	47.1	51.3

The women now outnumber the men, even if the graduate students resident at Berkeley in the strictly professional schools are included.

In addition to the 1092 registered students, 163 accepted candidates for higher degrees continued their studies under the direction of the University during temporary absence. The number of graduate students in the Summer Session is found to increase from year to year, if the abnormal increase in 1915, due to the Panama-Pacific International Exposition, be left out of consideration. The actual number of graduate students enrolled in the Summer Sessions of 1913, 1914, 1915, 1916, was 443, 825, 1552, 1255, respectively. Including duplicates, over 2500 students came under the supervision of the Graduate Division in 1916–17.

Institutions Represented.—The classification of graduate students according to the institutions from which they had received degrees was as follows:

	1915–16			1916–17		
	No. of institutions	No. of students	Percentage of students	No. of institutions	No. of students	Perce age o stude
University of California	1	563	55.5	1	675	61.8
Other California institutions	12	94	9.3	11	119	10.9
Other institutions west of the Rocky Mountains	24	56	5.5	20	72	6.6
Middle Western institutions	74	190	18.7	65	165	15.1
Eastern and Southeastern institutions	58	128	12.6	53	108	9.9
Foreign institutions	38	47	4.6	25	27	2.6

The total number of institutions represented in these figures for the three successive years was 168, 207, 175. The unusually large number of institutions represented in 1915–16 was probably due to the Panama-Pacific International Exposition.

The noticeable feature of the foregoing table is the constant increase of the percentage of the graduate students who have received their Bachelor's degree from the University of California. During the Exposition year there was a temporary increase of graduate students coming from distant institutions. The percentages of students from the latter institutions during the last year decreased approximately to the percentages prevailing before the Exposition.

Candidates for Higher Degrees and Degrees Conferred.—The number of accepted candidates for higher degrees, the number of degrees conferred, and the number of recommendations for the high school teacher's certificate issued by the University has been as follows:

	1914–15		1915–16		1916–17	
Degree	Candidates	Degrees conferred	Candidates	Degrees conferred	Candidates	Degrees conferred
M.S. and M.A.	233	119	295	149	297	131
Gr.Arch.	5	3	3	1	4	1
Gr.Educ.	0	0	0	0	2	1
Gr.P.H.	5	5	0	0	1	1
J.D.	25	20	32	22	39	30
C.E.	0	0	1	0	1	0

	1914-15		1915-16		1916-17	
Degree	Candidates	Degrees conferred	Candidates	Degrees conferred	Candidates	Degrees conferred
C.E.	0	0	0	0	1	1
Ph.D.	81	22	95	22	99	33
Total	349	169	426	194	444	198
High School Teacher's Recommendations	225	225	243	218	333	290
Grand Total	574	394	669	412	777	488

Here also the year 1915–16 stands out as somewhat exceptional, particularly with reference to the number of master's degrees conferred, which was unusually large for that year. A total of 488 higher degrees and recommendations for the high school teacher's certificates were conferred during the academic year 1916–17. Two hundred and ninety represented graduate students entering the teaching profession.

The number of candidates who either withdrew or were disqualified has been as follows:

	1914–15	1915–16	1916–17
M.S. and M.A.	15	22	24
J.D.	0	1	5
Ph.D.	2	3	13
H.T.R.	0	17	1

The number of Doctor of Philosophy degrees conferred was the largest in the history of the University. One-third of the accepted candidates completed their work, while during the preceding years less than one-fourth completed their work for the degree. Only about 44 per cent of the candidates for the Master's degree completed their work during the academic year, while during the preceding year approximately 50 per cent completed their work.

Up to the present time the University has conferred a total of 181 degrees of Doctor of Philosophy. Of these, 33 were conferred during the past academic year. The following table gives a comprehensive view of the past and present activities of departments in regard to graduate and research work leading to this degree:

	Total No. Ph.D.'s conferred	Candidates Ph.D. 1914–15	Ph.D.'s conferred 1914–15	Candidates Ph.D. 1915–16	Ph.D.'s conferred 1915–16	Candidates Ph.D. 1916–17	Ph.D.'s conferred 1916–17
Agriculture	8	3	0	6	3	6	3
Anthropology	2	0	0	0	0	0	0
Archaeology	1	0	0	0	0	1	1
Astronomy	21	6	1	8	1	8	3
Biochemistry	4	0	0	2	1	3	1
Botany	12	5	3	3	2	1	1
Chemistry	20	7	5	6	5	5	4
Economics	3	2	0	5	1	6	0
Education	3	9	0	9	0	10	1
English	4	1	0	0	0	2	0
Geology	10	1	0	2	0	3	2
German	3	3	0	4	0	4	0
Hebrew	1	1	0	1	0	0	0
History	17	13	5	9	2	9	5
Hygiene	0	0	0	1	0	0	0
Jurisprudence	0	1	0	1	0	1	0
Latin	4	2	0	3	0	2	0
Linguistics	1	0	0	0	0	0	0
Mathematics	11	2	0	4	2	1	1
Oriental Languages	0	1	0	2	0	2	0
Palaeontology	8	4	2	3	1	2	2
Pathology	0	0	0	1	0	1	0
Philosophy	5	2	1	2	0	2	2
Physics	9	3	2	5	1	6	2
Physiology	9	1	0	0	0	3	0
Political Science	5	4	0	6	0	7	2
Psychology	0	0	0	1	0	2	0
Romanic Languages	2	5	0	5	2	3	0
Zoology	18	5	3	6	1	9	3
Total	181	81	22	95	22	99	33

The distribution of graduate students by major subjects for candidacy for the Master's and Doctor's degrees and for the recommendation for the high school teacher's certificate has been as follows:

Major subject	1915–16				1916–17			
	No. of students	T.R.	M.S. M.A.	Ph.D.	No. of students	T.R.	M.S. M.A.	Ph.D.
Agriculture	82	8	31	6	63	15	21	6
Anatomy	2	3	1	0	4	1	1	0
Anthropology	6	1	1	0	6	2	2	0
Archaeology	0	0	0	0	1	0	0	1
Architecture	22	4	8	0	18	5	5	0
Astronomy	10	1	1	8	7	1	0	8
Botany	14	12	2	3	18	8	9	1
Chemistry	50	6	12	6	46	6	13	5
Drawing and Art	10	5	2	0	14	13	4	0
Economics, Commerce	59	6	15	5	67	16	22	6
Education	74	28	22	9	97	50	33	10
Engineering	17	3	6	0	16	7	4	0
English	118	37	36	0	109	45	44	2
Geography	5	3	1	0	5	3	2	0
Geology and Mineralogy	11	1	2	2	13	1	0	3
German	51	15	19	4	51	36	23	4
Greek	4	3	2	0	3	1	1	0
History	78	25	23	9	86	53	22	9
Home Economics	34	23	6	0	30	29	3	0
Hygiene, Public Health	13	4	4	1	14	4	5	0
Jurisprudence	98	4	0	1	88	7	0	1
Latin	34	17	15	3	30	25	13	2
Mathematics	32	14	14	4	41	20	20	1
Medicine, Research Medicine	28	0	1	0	37	0	1	0
Music	5	0	0	0	3	0	0	0
Oriental Languages	3	0	1	2	2	1	0	2
Palaeontology	3	0	0	3	3	0	0	2
Pathology and Bacteriology	8	0	2	1	23	0	2	1
Philosophy, Psychology	38	9	8	3	38	7	9	5
Physical Education	9	2	0	0	9	2	0	0
Physics	30	6	11	5	24	5	7	6
Physiology, Biochemistry	17	8	10	2	16	3	2	5
Political Science	20	3	10	6	16	6	9	7
Romanic Languages	54	20	14	5	49	30	12	3
Semitic Languages	6	1	0	1	1	2	1	0
Slavic Languages	4	0	1	0	4	0	2	0
Zoology	36	12	14	6	21	6	6	9

In addition to the numbers tabulated in the foregoing table, there were four candidates for the degree of Graduate in Architecture, two for the degree of Graduate in Education, one for the degree of Graduate in Public Health, one for the degree of Civil Engineer, one for the degree of Electrical Engineer, and thirty-nine for the degree of Juris Doctor. With reference to the significance of the table, the same observations apply that were recorded in my report for the preceding year.

Graduate work in the Summer Session.—The relation of the Summer Session to the Graduate Division is exhibited by the following tables:

Summer Session	1913	1914	1915	1916
Number of graduate students	433	825	1552	1255
Number enrolled in graduate courses	212	334	440	337
Percentage taking graduate courses	49	40	28	27

Year	Master's degrees conferred	Enrolled in Summer Session	Percentage
1912–13	89	15	17
1913–14	119	19	16
1914–15	119	18	15
1915–16	149	27	17
1916–17	131	33	25

The satisfactory growth of the number of graduate students in the Summer Session has already been referred to. Omitting the Exposition year, the percentage of graduate students enrolled during the Summer Session in strictly graduate courses has steadily declined from 49 per cent in 1913, to 40 per cent in 1914, to 27 per cent in 1916. On the other hand, the percentage of graduate students who avail themselves of Summer Session opportunities in partial fulfilment of the requirements for the Master's degree has risen to 25 per cent from an average of 16 per cent for the three preceding years.

Effect of the War.—The war has commenced to show its effect on the Graduate Division. A considerable number of appointees to graduate scholarships and fellowships have relinquished their appointments for the purpose of serving the government during the present emergency. In some cases alter-tes selected at the time the original appointments were made ere available to fill the vacancies, but among the graduate holarships and fellowships which probably will remain vacant re the following:

The two Flood Fellowships in Economics.

One John W. Mackay Junior Fellowship in Electrical Engi-eering.

The two Whiting Fellowships in Physics.

The Professor F. V. Paget Scholarship in French.

One of the Lick Observatory Fellowships in Astronomy.

Two of the University Fellowships in Pacific Coast History.

Two of the Preston School of Industry Fellowships.

Board of Research.—With the approval of the President, the oard of Research has made the following special grants to embers of the faculty in furtherance of research work not therwise provided for:

To Professor H. E. Bolton, the sum of $500 for the purpose f securing manuscript materials from Spain for his researches n Spanish-American History.

To Professor William A. Setchell, the sum of $250 for assist-nce, particularly for the employment of an artist in preparing llustrations for his work on the "Algae of the Western Coast f North America," an investigation conducted in collaboration with Professor Nathaniel L. Gardner.

To Professor C. A. Kofoid, the sum of $250 for assistance, particularly for the employment of an artist in preparing illustrations for his work on the "Dinoflagellata of the Pacific Coast."

To Professor Andrew C. Lawson, the sum of $100 for a study on the relations of intrusive igneous masses to sedimentary strata involving the question of the mechanics of intrusion of plutonic masses and the effect of such intrusions upon the sedimentary rocks adjacent to them. These studies are being conducted by Mr. C. W. Clark, Ph.D., 1917.

To Professor Andrew C. Lawson, the sum of $300 for the study of the genesis of the quicksilver deposits of California, with the assistance of Mr. C. L. Moody, A.B., 1916.

To Professor Theodore C. Burnett, the sum of $100 for the promotion of his cancer investigations.

To Dr. Edwin S. Sundstroem, the sum of $150 as a contribution toward the expenses of an expedition to Pike's Peak for the study of the biological phenomenon of acclimatization, particularly with reference to the effect of high altitudes, a study of importance in aviation.

To Professor Ivan C. Hall, the sum of $27.50 for the promotion of his studies of anaerobic methods involving the importance of inert gases in the cultivation of anaerobes.

To Professor R. S. Holway, the sum of $150 for the promotion of his study of the evolution of topography in the coast ranges of California, in particular of marine and river terraces.

To Professor T. Brailsford Robertson, the sum of $150 as a contribution to the manufacture of tethelin in order to render possible a trial in military camps of its possibilities in regard to the healing of wounds.

To Dr. Dinsmore Alter, the sum of $100 for the construction of a light portable range finder for infantry and artillery use, in accordance with his own design, for submission to the War Department.

To Professor W. Popper, the sum of $50 for clerical help in preparing his "First Edition of Arabic Texts, Dealing with the History of Egypt in the Mohammedan Period."

To Professor George M. Stratton, the sum of $245 for psychological researches in connection with aviation, to be conducted by authorization of the National Defense Council at the aviation camp at San Diego.

To Professor R. Schevill, the sum of $50 for stenographic help in preparing the manuscripts pertaining to his edition of the work of Cervantes.

The Hitchcock and Faculty Research Lectures.—The Hitchcock Lectures for the year were delivered by Robert Andrews Millikan, Professor of Physics in the University of Chicago, on January 18, 19, 22, 23, 25, and 26, 1917, the subjects of the lectures being, "Electricity in the Nineteenth Century," "X-Rays and the Birth of the New Physics," "The Electron: Its Isolaion and Measurement," "Brownian Movements and Sub-elec-rons," "The Structure of the Atom," and "The Nature of Radiation." Professor H. E. Bolton, Professor of American History, was chosen by the Academic Senate to deliver the annual Faculty Research Lecture. The subject of his lecture, which was given on March 22, 1917, was "The Mission as a Frontier Insti-ution in the Spanish-American Colonies."

Respectfully submitted,

A. O. Leuschner,
Dean of the Graduate Division.

HASTINGS COLLEGE OF THE LAW

San Francisco, July 1, 1917.

To the President of the University,

Sir: I have the honor to present the following report of the Hastings College of the Law for the year 1916–17.

The work of the College in the last year has been entirely satisfactory. Although the number of students has decreased, the quality of the work done has improved. The Senior Class was composed of twenty men, and of these, sixteen were graduated.

Dr. Hengstler resigned his chair after a faithful service of twenty years. The vacancy caused by his resignation was filled by the appointment of Mr. Thomas A. Thacher to the chair of Constitutional Law, and by the appointment of Mr. Alan C. Van Fleet to the chair of Evidence.

The plan of the State Building to be erected in the Civic Center provides quarters for the College which are fully ample for their purpose. In this building, at last, we are to have a permanent home.

Respectfully submitted,

Edward R. Taylor,
Dean.

HOOPER FOUNDATION

San Francisco, July 1, 1917.

To the President of the University,

Sir: I have the honor to present the following report of the George Williams Hooper Foundation for Medical Research for the year 1915–16.

The Research Laboratory has developed more facilities for experimental work, has added to its staff, and has been favored with the co-operation of more volunteer workers from other departments. The animal quarters have been enlarged and every care is taken for their comfort and cleanliness. The animal rooms are open at all times to visitors who may be interested in the question of vivisection or animal experimentation.

Some time and effort on the part of various members of the staff have been expended in an attempt to inform various communities and groups of individuals concerning the true status of animal experimentation or vivisection. Most of the opposition to this necessary experimental work comes from people who are ignorant of the work of the modern research laboratory or have been misinformed by active antivivisectionists who are not open to reason or argument. The solution of this difficulty lies wholly in the education of the public to understand the value of medical research and the modern methods which never permit needless pain.

A bronze tablet to commemorate the splendid gift of Mr. George Williams Hooper and his wife, Sophronia Taylor Hooper, has been placed beside the entrance door of the laboratory.

RESEARCH WORK

Doctor Walker's trip of investigation to the Amazon basin has been completed during the past year. For some months after his return he worked in the Harvard Medical School as a guest of the School of Tropical Medicine and is now busied in this laboratory in working up the valuable material collected in Brazil. His work concerns some of the obscure tropical diseases which are due to various parasites of the blood, intestine or other organs of the body. Every possible assistance was rendered Doctor Walker by Doctor Walcott, a graduate of this University, in charge of the medical work at Porto Velho, Rio Madeira, Amazon, Brazil.

A variety of problems have interested the different members of the laboratory staff and often called for co-operation on the part of the staff of the Hospital and Medical School. The laboratory staff is very grateful for this friendly spirit of co-operation, which has made possible work which otherwise could not have been undertaken. The various problems must of necessity be reviewed in the briefest manner, presented as group problems rather than as the work of separate individuals.

Typhoid and Dysentery Groups of Bacteria (Meyer and Stickel). The work continues that of the previous year, but particular attention has been directed toward the production and study of "typhoid carriers" in animals. Human carriers are of great importance in the spread and epidemiology of typhoid fever and clear knowledge of this condition can only be obtained by animal experiments. Doctor Meyer has been able to produce "typhoid carriers" with regularity in animals, and this makes possible an intensive study of this condition with curative treatment as the final goal. The influence of bile upon growth of typhoid bacilli is being investigated and promises to throw some light upon factors which influence the growth of the typhoid bacillus in the animal body.

Renal "typhoid carriers" (Meyer and Hinman) are also being produced and studied in a variety of ways.

Certified milk (Meyer and Fleischner) of San Francisco has been studied by means of animal inoculation and found to be free from the tubercle bacillus, but heavily infected with the abortion bacillus. The bacillus of abortion disease in cattle is not known to be injurious to human beings, but does great harm to animals and causes great property loss to the farmer. These observations are important from a public health standpoint, but even more from an economic viewpoint. Methods for testing infected animals are being worked out and may have much practical value.

Pyelocystitis of children is being studied bacteriologically (Meyer and Gerdine) and various bacteria have been found capable of causing a certain degree of inflammation of the urinary tract.

The *chemistry of amino acids* (Rohde), particularly the uramino-acids and their relation to general body metabolism, is being investigated. Also the organic iodine compounds of the thyroid are being studied and the finer histological changes in the thyroid which may be related to the action of these organic compounds.

Studies of the irritability and rhythmicity of the musculature of the *gastro-intestinal tract* (Alvarez and Taylor) are being continued and show many points of practical clinical importance. There is a definite gradient in the intestinal tract. The rhythmic activity is normally greater in the upper part of the small intestine and gradually falls to its lowest level in the colon. The fact that this gradient may be reversed in various diseased conditions furnishes a simple explanation for vomiting. Many drugs also cause definite modifications of this gradient (emetics, purgatives, etc.), modifications which explain in part the well-known pharmacologic effects. These studies include observations on human material as well as on aimals.

Pigment metabolism (Hooper and Whipple) is being studied from several angles. The elimination of bile pigment has been studied for the past three years by means of biliary fistulas and it is possible to influence the production of this pigment by diets, drugs, organ extracts and other substances. This is thought to have important bearing on pigment construction in the body, which is being studied simultaneously. Doctor Hooper has perfected a new method to estimate accurately the blood volume of any animal and this has made possible an exact study of hemoglobin regeneration—or a study of the red pigment of the blood. It is possible to influence the curve of blood regeneration in a variety of ways and these studies will have some practical application in the treatment of anemia.

Bile salts (Hooper and Foster) are being studied in the same animals used for bile pigment metabolism and a much needed accurate quantitative method of analysis is being worked out.

Blood proteins (Kerr, Hurwitz and Whipple) are important elements of normal blood about which we know nothing. These proteins can be removed in various ways and the curve of regeneration is being established under varying conditions. It is hoped to find out where these substances are formed, what useful purpose they serve in the body, and what their fate may be in health or disease. It has been found that these blood proteins vary markedly in intoxications and further (Meyer, Hurwitz and Taussig) that interesting variations may be found in various infections and during immunization.

Hydronephrosis (Hinman) is being produced experimentally and its influence upon kidney function and kidney repair carefully measured with obvious practical application to human diseased kidneys.

Acidosis (Whitney) has been followed in a variety of clinical cases, and some important observations recorded.

Trinitrotoluene (Kerr and Whipple) is an important explosive which has definite poisonous properties and has caused the death of many munition workers, especially in England. This explosive is being studied with particular reference to its poisonous effect upon animals. The poison acts with greatest intensity upon the liver and blood cells. Material for this study has been furnished through the courtesy of the Hercules Powder Company.

Intoxications and shock are being studied by various experimental procedures. Intestinal obstruction (Cooke, Woolsey and Whipple) gives the best opportunity for study of certain factors of non-specific intoxication. Certain substances have been isolated which appear to be concerned in this intoxication and give an opportunity for more direct investigation of this important subject. Shock (Belt, Smith and Whipple) which is caused by sudden changes in plasma density is being investigated to show if possible any existing relationship to the clinical picture of shock in diseased conditions. Intoxication (Hall and Whipple) which develops after prolonged treatment with the X-ray presents many interesting features which are being investigated.

The completed work has been published in a variety of journals and the first volume of "Collected Reprints" containing twenty-one papers has been distributed. The second volume is in process of completion and will appear in the near future. During the past year twenty-three publications have appeared from the laboratory and these papers appear in the bibliography of this report under the names of the different workers.

PERSONNEL

The laboratory staff has consisted of twelve workers, whole time appointments with a single exception. This is an increase of two over last year. The technical staff has been increased from eight to eleven workers and has increased greatly in general efficiency.

During the year three student fellows were appointed from the second-year class of the Medical School (Arthur E. Belt, Charles C. Hall and Harry P. Smith). Their work has been uniformly excellent and the Trustees have decided to offer each year two similar student fellowships of $600 each to students of suitable training and promise. This work, if desired, may count as the fifth or "intern" year in medicine or toward any of the higher degrees in the University. A broader training in medical research and pathology is a valuable asset to any student and more than repays the extra effort.

Volunteer workers have contributed even more than last year to the general productivity of the laboratory. In all, fifteen volunteer workers representing all the clinical divisions of the Medical School have investigated a variety of conditions either alone or in co-operation with some member of the permanent aboratory staff. The following individuals make up this group: Drs. Appleton, Cooke, Emge, Fleischner, Gerdine, Harvey, Hinman, Kilgore, Langstroth, Naffziger, Whitney and Woolsey; Miss Stickel, graduate student; Mr. Taussig and Mr. Taylor, medical students. The laboratory staff sincerely appreciates the cordial spirit of co-operation and helpfulness exhibited by all the departments of the Medical School.

An exchange fellowship has been approved by the Trustees and will enable research workers of recognized ability to visit the laboratory during the summer months. The laboratory will benefit by their work and especially by the stimulus of personal contact. Dr. D. D. Van Slyke of the Rockefeller Institute accepted this fellowship, and will be in the laboratory during the summer.

A grant to Drs. Schmidt, Gay and Robertson has been continued for another year to support their valuable work in the complex field of immunology.

Joseph Webb, Margaret Beattie and Frieda S. Robscheit have been appointed fellows in research medicine for the ensuing year. Dr. E. D. Plass received a joint appointment from this department and the Department of Obstetrics and Gynecology. He is now in France and his return is somewhat indefinite.

This department loses but one member by resignation, and, fortunately, this is not a loss to the school, as Dr. Hurwitz has accepted an appointment with the Department of Medicine.

Respectfully submitted,

George H. Whipple,
Director.

UNIVERSITY INFIRMARY

July 1, 1917.

To the President of the University,

Sir: I have the honor of presenting to you the following report of the Infirmary for the year 1916–17.

The past year has been an exceedingly busy one for the Infirmary staff because of the large University enrollment and the increase of intrants.

During the spring semester the University received its quota of contagious diseases, which, according to health reports, were epidemic about the bay counties. Mumps, measles, rotheln, scarlet fever, and diphtheria were prevalent practically throughout the term. Many epidemiological measures were resorted to in order to combat contagion among our students, which materially lessened the epidemic. Measles and mumps predominated and were of a mild type with practically no complications. So mild were some of the cases that the individuals were not incapacitated or the disease recognized. It was this class of carriers that kept the epidemic dragging on for several weeks, consequently adding burdensome expense and much labor in maintaining a large number of patients during the period of isolation. The University Physician appreciates the co-operation the faculties and students rendered in their efforts to suppress the epidemic.

A urological service has been added to our Dispensary, which is in line of preventive as well as curative medicine. Social diseases do prevail in cultured communities notwithstanding our teachings, and these cases, which were not heretofore granted the privileges of the Infirmary, are now properly treated and advised. The increased number of these social diseases in our statistics is not a criterion that these afflictions are more prevalent than in former years, but is evidence that they existed. Dr. Meads is ably conducting this important service.

The operative costs for maintaining the Infirmary were materially increased this past year due to the epidemic of contagious diseases and the high cost of living. These facts, coupled with increased salaries, war conditions, the reduction of surgeon's fees, and the crediting by the Board of Regents of the unpaid students' surgical bills, has markedly reduced our unexpended balance.

During the past year valuable assistance was given by our Infirmary for an intensive study of the system by the California Commission of Social Insurance.

The Dental Department continues to meet the needs of oral hygiene and students appreciate this important service, which has passed its second successful year.

Inspired by patriotic motives and our constructive training to conserve humanity, our Department of Hygiene and Infirmary has, in the name of the University of California, done "its bit," as our country entered the war. We have organized, from the student body, a Red Cross Ambulance Unit, which was automatically mustered into the Regular Army. Three of our staff have received commissions in the medical section of the Officers' Reserve Corps. Dr. Legge conducted the physical examinations for the University quota for the first Officers' Training Camp. Dr. Meads was ordered to Fort Riley, Kansas, and Dr. Powell, with the Ambulance Unit, to Allentown, Pennsylvania. Miss Cheek, one of our staff nurses, entered the Red Cross Base Hospital Unit for service in France.

The marriage, on June 1, 1917, of Dr. A. M. Meads, Lecturer in Hygiene and Associate University Physician, for many years on the Infirmary staff, to Dr. Romilda Paroni, Assistant Professor of Hygiene and University Physician for Women, on the eve of his departure for the war, was a romantic culmination of their association at the Infirmary. Dr. Paroni Meads will retain her appointment until Dr. Meads' return from the Army.

Of the house cases treated for serious medical and surgical diseases among the student body, all recovered. One death is recorded, that of a laborer, whose skull was crushed while employed in the construction of the library annex building.

Respectfully,

ROBERT T. LEGGE,
University Physician.

IMMUNIZATION SERVICE

July 1, 1917.

To the President of the University,

SIR: I have the honor to submit herewith my annual report of the immunization service conducted at the University Infirmary during the academic year 1916–17:

Smallpox Vaccination.—It is a source of profound gratification to report that the methods elaborated at this University for smallpox vaccination and the recognition of smallpox immunity have been made the subject of a special report to the Council of National Defense and the National Research Council. The report, which was made at the request of the Council, was entitled "Smallpox Vaccination at the University of California," and was illustrated by sixteen photographs.

The department has been frequently criticized for failing to recognize vaccination certificates issued by outside physicians. While our state vaccination act permits the issuance of certificates of immunity, based on two attempts to vaccinate, and while certificates of vaccination are given after the administration of "variolin" pills, we should be failing in our duty to the student body if we did not question the immunity alleged by these certificates. That we are justified in our procedure is evidenced by reference to the accompanying table, showing the high percentages of primary vaccinias secured in unscarred intrants with a history of from one to four or more vaccination failures. In this group, representing eleven per cent of all intrants, only four persons were actually immune. We have never seen the slightest indication of immunity in a person previously vaccinated by the ingestion of "variolin."

On the basis of 2379 intrants examined during the year, the following percentages have been determined:

Intrants	1913–14 Per cent	1914–15 Per cent	1915–16 Per cent	1916–17 Per cent
Requiring vaccination	31	20	21	20
With history of smallpox	3	6	3	4
Showing no vaccination scar	19	16	17	19
Never vaccinated	16	6	7	8

Typhoid Vaccination.—Failure to secure a positive typhoidin skin reaction in thirty-three per cent of persons, vaccinated with the usual three doses during the early part of 1916, suggested our increase in either the number of doses, or the size of each dose. Accordingly, during the second half-year four doses, each representing 0.1 mg. (800,000,000 organisms), of either sensitized or unsensitized typhoid vaccine, were given. Skin tests, following the four doses, gave the following gratifying results in comparison with three doses:

Vaccine	Doses	Persons Positive	Persons Negative	Per cent Negative
Unsensitized	4	8	0	0
Sensitized	4	12	1	8
Unsensitized (Army)	3	15	2	11
Sensitized	3	22	16	42

Professor Gay, who supplied a portion of the vaccines used in the experiment, has recommended an increase in the size of each dose of vaccine rather than an increase in the number of doses.

The accompanying table shows the reactions resulting from typhoid vaccinations performed during the year 1916–17. In previous years the reactions to revaccination have been slightly more severe than to the original vaccination. Since we have been having revaccination on a negative typhoidin test, however, we have noted that there is little difference between the reactions following revaccination and the original vaccination. This would indicate that the absence of a positive skin test would show an absence of sensitiveness to typho-protein.

Reactions following the use of unsensitized vaccine were slightly greater in number and severity than those following the use of sensitized vaccine. Vaccination with unsensitized vaccine produced a slightly greater number of reactions than revaccination with unsensitized vaccine.

A number of men proposing to enter training camps were vaccinated against typhoid and given certificates to that effect.

Respectfully submitted,

J. N. Force,
Assistant Professor of Epidemiology.

SMALLPOX VACCINATIONS

August 18, 1916–May 16, 1917

Results Classified According to Vaccination History

	Vaccinia			Vaccinoid			Reaction of Immunity		
	M	W	%	M	W	%	M	W	%
Scar absent—									
Previously unvaccinated	83	95	96	5	3	4	....	....	....
History of smallpox	4	3	24	8	3	38	7	4	38
History of ingestion of "variolin"	1	1	100	....	....	....	....	....	....
Previously vaccinated (no scar)—									
Once	70	75	92	5	5	6	....	2	2
Twice	21	16	92	1	1	5	1	....	3
Three times	9	15	86	3	1	14	....	....	....
Four times, or more	14	15	88	1	2	9	....	1	3
Scar indistinct	9	7	52	3	7	32	2	3	16
Scar distinct	1	6	12	21	3	39	25	5	49

Observations completed 567
Left University 3

Total vaccinations 570

TYPHOID VACCINATIONS—March, 1913–May, 1917

					Percentages of Reactions											
	Number of persons inoculated				Local						General					
					Slight			Severe			Slight			Severe		
Number of Inoculations	I	II	III	IV	I	II	III	I	II	III	I	II	III	I	II	III
Vaccinations—																
March, 1913–May, 1916																
Sensitized vaccine	1965	1910	1869	....	14	14	5	4	4	1	26	26	9	2	3	1
June, 1916–May, 1917																
Sensitized vaccine	135	126	124	77	27	27	8	10	6	2	16	27	10	2	3	0
Unsensitized vaccine	46	43	38	34	26	14	13	15	16	3	33	30	18	15	12	0
Revaccinations—																
August, 1915–May, 1916																
Sensitized vaccine	72	55	40	....	25	19	5	18	9	0	35	40	7	8	7	0
June, 1916–May, 1917																
Sensitized vaccine	78	51	45	31	24	17	13	2	8	9	15	16	11	5	2	4
Unsensitized vaccine	22	23	11	7	14	9	9	27	13	9	27	13	9	14	0	0

Slight local reaction: Redness of the inoculation site from 40 to 75 mm. in diameter.
Severe local reaction: Redness of the inoculation site over 75 mm. in diameter.
Slight general reaction: Headache, lassitude, disturbed sleep, loss of appetite, a rise in temperature to 38 degrees C.
Severe general reaction: Chill, diarrhoea, a rise in temperature above 38 degrees C.

UNIVERSITY LIBRARY

July 1, 1917.

To the President of the University,

Sir: I herewith submit a condensed report on the University Library for the year 1916–17. Full details and statistics of work accomplished are held in this office.

The Library Building.—With the exception of a few finishing touches, the reconstruction and additions to the building have been completed. Additional furniture and equipment are still to be supplied. The beauty of the East reading room and of the Library of French Thought is highly appreciated and commended.

For both the reading public and the staff the year has been a very strenuous period, mitigated by happy expectations. That no great number of complaints has been made is due to the efficiency of the shelf and loan departments, and the kindly consideration of all persons affected.

Accessions

	Volumes	
Received by purchase	11,400	
Received by exchange	2,070	
Received by gift	5,141	
Received by department libraries	4,092	
Total received		22,703
Lost or withdrawn from use		395
		22,308
Volumes at date of last report		332,884
Total volumes in the Library		355,192
Pamphlets, including dissertations		1,102

Periodicals and serials received by purchase, exchange and gift number 8110, a net increase of 710 over the previous year.

Accessions of this year are about the same as those of the two previous years in both number and quality. The receipts of 1915–16 apparently are more numerous, but the total was enlarged by the accessioning of departmental and old material hitherto uncatalogued.

Exchanges.—The total number of exchange institutions is 1330, a net increase of eighteen for the year. Complete sets of the Society of Arts and Sciences and the Natural History Society, both of Batavia, are being sent us. By arrangements made with Argentina and Chile libraries we are promised as complete sets as possible of the documents of those two countries.

Gifts.—To be especially mentioned are the bequest of $10,000 by our honored former President, Horace Davis, the continuing gifts by Mr. J. C. Cebrian of Spanish books (about 1370 volumes), and a private Chinese library presented by Mr. S. C. Kiang, assistant in the University (about 15,600 volumes or parts).

Hon. John D. Works has made a permanent deposit of his large and historically interesting correspondence during the six years of his service as United States Senator.

Important Additions

General Library

American ceramic society. Transactions, vols. 1–16.
American journal of pharmacy, vols. 1–59.
Annales de l'Observatoire de Nice, vols. 1–12 and 14.
Archaeological survey of India. Reports, 1871–87; 24 volumes.
Boston news letter. Photostat prints, 1715–25.
Builder, vols. 1–85.
Calcutta review, 1844–1903, vols. 1–117 and index.
California farmer, vols. 13, 14, 25–36, 39–40, 45–49.
Canadian mining institute. Journal, vols. 2–13.
Chetham society, Manchester, publications, vols. 1–114 and new series, vols. 1–48.
Cuvier. Le Règne animal, 20 volumes.
Cymmrodorion society y Cymmrodor, vols. 1–21; transactions, vols. 1–24.
Electrical review and western electrician, vols. 3–60.
Entomologist, vols. 1–35.

Fauna of British India, 33 vols.
Garden, vols. 1–62.
Giornale de storico, vols. 1–44.
Histoire général de Paris, 53 vols.
Hygienische rundschau, vols. 1–20.
Indian antiquary, vols. 1–25, 1872–96.
Institute of metals. Journal, vols. 1–14, 1909–15.
Journal of American medical association, 46 vols.
Journal of mental science, vols. 2–31 and 3 indexes.
Leonardo da Vinci. Quaderni d'anatomi. (Completion of set.)
La lumière électrique, vols. 1, 7–53.
Mémoires de l'académie royale, Berlin, 7 vols.
Mining institute of Scotland. Transactions, vols. 1–15.
Missouri geological survey. Reports, 1840, 1856, 1858, 1860, 1870, 1890, 1893, 1896, 1901.
Morphologisches jahrbuch (Gegenbaur), vols. 1–24.
Psyche. Cambridge entomological society, vols. 1–18.
Raemakers. The great war: a neutral's indictment.
Railway engineer, London, vols. 1–32, 1880–1911.
Rerum Italicarum scriptores, nos. 1–143.
Royal colonial institute. Proceedings, vols. 1–30.
Scrittori d'Italia, 49 vols.
Società degli spettroscopisti Italiani. Memorie, 1–36.
Société royale de botanique de Belgique. Bull., vols. 1–34 and index.
Surtees society. Publications, vols. 1–106.
Surveyor and municipal and county engineer, vols. 1–40.
William Salt archaeological society. Collections for a history for Staffordshire, vols. 1–39.
Victoria history of the counties of England. 13 vols.

Architecture Department

Neufforge. Recueil d'architecture, 12 vols. in 4.

Law Library

Blackstone. Commentaries (several editions), 54 vols.
Blackstone Inst. Modern American law, 15 vols.
Canada law times, vols. 1–30.
Canada law journal, vols. 1–46.
Canada supreme court. Reports, vols. 1–45.
Canadian criminal cases, vols. 1–18.
District of Columbia. Appeal reports, vols. 1–40.
English ecclesiastical reports and probate and divorce reports.
English ruling laws, extra annotated ed., vols. 1–26.
Irish reports, 70 vols.
Ontario law reports, vols. 1–25.

Selden society. Publications, 32 vols.
U. S. supreme court. Reports, vols. 1–59.
Yearbooks 1678–1680, Maynard ed., 7 vols.

Bancroft Library

Medina. La imprenta en Mexico, vols. 1, 6, 7, 8 (completing set).

Medical School Library, San Francisco

Four hundred and eighty-six volumes of ophthalmological periodicals presented by Mr. Alexander F. Morrison, of the class of 1878.

Catalogue Department: Old Catalogue Division.—The ordinary work has covered 10,036 titles in 11,627 volumes, and 7673 volumes of continuations. For new accessions it furnishes cards for all departmental libraries, and for the union catalogue of Agricultural Stations at Riverside and Davis.

This department for the first time compiled the bibliography of faculty publications as published in the President's Report of 1915–16.

Catalogue Department: New Catalogue Division.—A considerable increase in the volume of work has been accomplished. Two new classes, G (Geography, Anthropology), and L (Education), have been nearly covered, and C and D (History other than American), will be begun next year. As the work of reclassification progresses, a larger proportion of new accessions will be handled, but without ampler efficient force the total work will not equal the Library's total acquisitions. Nine thousand four hundred and twenty-six titles in 21,342 volumes have been catalogued this year. Each assistant both classifies and catalogues the books assigned to her. Printing of our cards by the University Press has been suspended; only temporarily, we hope. Combination of the two catalogues into one alphabet was initiated February 1, and is about one-fourth done.

Depository Catalogue.—Sixty-seven thousand four hundred and thirty-nine printed cards issued by the Library of Congress, and six other American libraries, have been filed.

Loan Department.—The number of books loaned out during this year is 297,544 volumes, a decrease of about three per cent as compared with last year. A smaller Summer Session in 1916, and disturbing war conditions during the second semester, account for this decrease.

The abolition in July, 1916, of the first-notice fine of twenty-five cents on overdue books, making the fine effective on the fourth day overdue, does not seem to work out satisfactorily; it encourages laxity on the part of students, very greatly increasing the number of notices. It may be advisable to restore a first-notice fine of five or ten cents to serve as a reminder, rather than as a penalty, and to offset clerical and postage costs.

Reference Department.—There has been a noticeable increase in requests for information coming from outside the University community. The students have made fewer demands, and our aim is to instruct them how to search for themselves and find their own material. The number of queries, requiring more or less research, was 14,840.

Shelf Department.—Building operations, and expansion of stack to nine stories, have entailed an enormous amount of work this year, practically equivalent to moving twice the entire collection of 350,000 volumes. This was most satisfactorily accomplished with a minimum of interference with the use of books.

Inventory of the main stack and seminars had to be omitted, but the reading room books were regularly checked with usual frequency. Twenty-two departmental collections, three of which were at the Affiliated Colleges in San Francisco, were inventoried.

Net losses from the reading room were 24 (Summer Session, 1916), 91 (first semester), 93 (second semester). From the departmental libraries 143 volumes were missing.

The chief additions to the map collection consisted of state maps and hydrographic charts. Its utility will be greatly increased by the new location and equipment.

The large mass of unbound material, pamphlets, reports, college publications, doctoral dissertations, and the like, has been inspected, checked and placed in pamphlet boxes. A considerable number were selected by the reference librarians for immediate binding and cataloguing.

Inter-library Loans.—This auxiliary service is of growing mportance. The larger libraries are meeting constantly increasng demands with real altruistic spirit.

Our loans to other institutions numbered 317 (721 volumes, an increase of nearly forty per cent over the preceding year); and to the University departments located outside of Berkeley 52 (94 volumes). We borrowed 98 times (169 volumes).

Library Summer School.—The course in Library Science for the present Summer Session is under the direction of Mrs. Theodora R. Brewitt of the Los Angeles Public Library Training School.

Financial Statement.—The library budget for 1916–17 carried appropriations as follows:

Salaries	$31,480.00
Assistance	16,700.00
Additional assistance in recataloguing	2,700.00
Books	25,000.00
Binding	5,000.00
Expense	4,800.00
	$85,680.00

The appropriation for books consists of the following items:

Income from gift funds for specified uses		$2,783.00
Income from Reese fund	$2,537.00	
University appropriation	19,680.00	
		22,217.00
		$25,000.00

Library Staff Changes.—Harold L. Leupp, Associate Librarian, was granted leave of absence May 11, 1917, to enable him to enter the Officers' Reserve Corps. Mr. Sydney B. Mitchell was appointed Acting Associate Librarian. Seven members of the staff are now in the service of the country.

Appointments.—Sydney B. Mitchell, acting associate librarian, May 11, 1917; Ellen A. Hedrick, classifier, July 1, 1916; Agnes M. Cole, senior assistant, November 1, 1916; Lois Criswell, senior assistant, January 15, 1917; Emily Turner, senior assistant, March 1–June 30, 1917; Clarence H.

Hurd, junior assistant, February 1, 1917; Esther M. Bomgardner, junior assistant, January 15–June 30, 1917; Christal F. Fox, junior assistant, March 1, 1917–June 30, 1917; Gertrude H. Horn, clerical assistant, July 1, 1916; George A. Leber, clerical assistant, July 1, 1916; Florence M. Baker, clerical assistant, August 16, 1916; Edith M. Schulze, clerical assistant, October 1, 1916; May Dornin, clerical assistant, October 1, 1916; Harold Brainard, attendant, January 8, 1917.

Resignations.—Evelyn A. Steel, senior assistant in charge of exchanges, July 17, 1916; Leslie Wilde, junior assistant, September 25, 1916; George A. Leber, clerical assistant, Feburary 1, 1917.*

Leave of Absence.—Harold L. Leupp, associate librarian, May 11, 1917.

Respectfully submitted,

J. C. Rowell,
Librarian.

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* Transferred to hour basis.

LICK ASTRONOMICAL DEPARTMENT

LICK OBSERVATORY

MOUNT HAMILTON, July 1, 1917.

o the President of the University,

SIR: I have the honor to submit herewith my report for the eriod July 1, 1916, to June 30, 1917.

All of the instruments of the Observatory are in excellent ondition. The 36-inch refracting telescope has been used innsively throughout every good night, except three or four ights in midwinter when the prevailing low temperatures did ot permit the use of the hydraulic system which operates the ovable floor in the dome. The Crossley reflecting telescope has een used intensively during the night hours when the moon as absent or thinly crescent. Useful photographic exposures re prevented, it is well known, when the sky is bright with oonlight.

A new mechanical device for guiding with the Crossley eflector when photographing very faint moving objects was esigned by Dr. Curtis and constructed in 1916. It is a great mprovement upon the former device in the positive character of he motion, and in total freedom from serious error and from ailure to work.

The eclipse instruments and auxiliary supplies which were eft in the keeping of the National Observatory at Pulkowa, ussia, following the Russian solar eclipse of 1914, have been a ource of anxiety, partly because many letters of inquiry adressed to the Observatory authorities failed to bring any reponse until the spring of 1917, but chiefly because it was feared he instruments would not be available for observing the total solar eclipse of June 8, 1918, in the northwestern part of tl United States. It is a pleasure to record that Mr. Allen (Freeman, a prominent citizen of California, who is now in Russi and is provided with due authorization from the University (California officials, will strive to arrange for the return of tl instruments. The Petrograd Academy of Sciences and tl Director of the Pulkowa Observatory have promised to co-ope ate with Mr. Freeman in the undertaking. It is expected th: the shipment will proceed via the Trans-Siberian route.

The eclipse of next year will occur in a month when tl weather conditions are promising and when the sun is at a go(altitude. It is hoped that the Observatory may arrange for tl sending of a well-equipped expedition to observe the interestii phenomenon.

At this time last year it was feared that the D. O. Mil Expedition to the Southern Hemisphere would have to close the spring of 1917 on account of lack of funds. The genero contributions of Mr. D. O. Mills during the years 1900–11 aı of Mr. Ogden Mills during the years 1911–17 had amounted a total of approximately $109,000, and under the disturbed fina cial conditions arising from the war Mr. Ogden Mills decid that he could not continue the support. I am pleased to rep(that seven friends of astronomy, including Mr. Ogden Mil have generously provided funds to extend the life of the expe(tion through five additional years, 1917–22. These are: M William H. Crocker, Mrs. William H. Crocker, Mr. F. W. Bra ley, Mr. A. B. Spreckels, Mr. W. B. Bourn, Mr. Gordon Blandir and Mr. Ogden Mills. The observing program for the obser tory on the summit of Cerro San Cristobal in the northeaste suburbs of Santiago, Chile, has accordingly been extended. T expedition is in charge of Acting Astronomer R. E. Wilsc Mr. A. A. Scott, Assistant at Santiago, resigned, to take effe in June, 1917, and his successor, Mr. Charles Morse Huffer, Albion College and the University of Illinois, will leave f Chile in July.

The first chairman of the Lick Observatory Committee of t Regents of the University was Mr. Timothy Guy Phelps, of S

Carlos. Both Mr. and Mrs. Phelps maintained a constant personal interest in the affairs of the Observatory up to the times of their deaths, in 1899 and 1916, respectively. In harmony with this interest, Mrs. Phelps bequeathed the sum of $35,000 to the Regents of the University of California, with the condition that the income from this fund be applied to the support of the library of the Lick Observatory, to be known as the Timothy Guy Phelps Memorial Library. The Observatory library is already an excellent one along the lines of observational astronomy. The bequest promises to make the library notable in size and quality in a decade or two after the estate funds become available.

During the past two years the major part of our resources have been devoted to studies of the nebulae, both the so-called gaseous nebulae, whose spectra consist chiefly of bright lines, and the spiral nebulae. Some of these studies have been completed and the results published. Several other studies will have been completed before the end of the present calendar year and the results are expected to appear in the Semicentennial Publications of the University. The pursuance of these greater problems has left no time in the past year for inaugurating new lines of research except as these have related to minor problems.

Mr. Curtis's photography of the planetary nebulae, mentioned in my last report, has been completed by the securing of 127 additional negatives. The program includes seventy-four objects, visible from Mount Hamilton. Most of these objects are too small to permit of direct photographic enlargement for purposes of publication. In addition, there are very great differences of intensity between the brighter central parts of the nebulae and the fainter outlying structures, so that, in general, a single photograph of one of the nebulae cannot convey adequate information as to the structural details. Mr. Curtis adopted the plan of taking a number of exposures of each object with varying exposure times and of making a composite drawing from the series of images. This was done for all the objects in the group except for a few of the larger planetaries where photographic enlargements were satisfactory. The half-tone blocks have been completed for all of these planetary nebulae, and the accompanying text is essentially ready for publication. This series of photographs shows that the planetary nebulae are exceedingly interesting objects and it furnishes a good basis for the further study of their structure, composition and physical conditions.

In the progress of this work Mr. Curtis has been able to recognize that several objects previously described merely as nebulae are, in fact, of the planetary type. One of these is the nebula, N.G.C. 7293, whose angular diameter is 15′, by far the largest of all the known planetaries.

Fewer than 150 planetaries are known to exist. Astronomers are familiar with the fact that the planetaries are nearly all located within or near the Milky Way. There are a few exceptions to the rule. Mr. Curtis's statistical study of their distribution in the sky with reference to their angular diameters led to the interesting conclusion that the planetaries having the smaller angular diameters preferentially group themselves near the central line of the Milky Way, those of medium size have a wider distribution, and the larger planetaries are fairly evenly distributed over the sky. These conditions are in harmony with the assumption that the planetary nebulae are distributed somewhat at random within our great ellipsoidal stellar system; those farthest away will in general be seen nearest the central line of the Milky Way and have the smallest angular diameters; and those relatively very near our solar system will in general have greater angular diameters and be seen in projection in directions making a great variety of angles with reference to the central plane of our system.

Mr. Curtis's representations of the planetary nebulae have been of great value to those of his colleagues who have been studying the planetaries along other lines, to be described later

There is perhaps no class of celestial objects concerning whose constitution we have so little definite information as the spiral nebulae. It is an important though somewhat neglected duty that as many as possible of the larger spirals should be photographed on a large scale. Such photographs would not only furnish data for studies of the geometric forms of spirals, but ould be of inestimable value to future generations of astronoers who will investigate the rotational and other internal moons and likewise the translational motions of the spirals. The rossley reflector is the only large instrument at present devoted stematically to this line of work, though the observatory at elwan, Egypt, has been employing its reflecting telescope in e photography of the spirals situated too far south of the lestial equator for observation by North American and Euroean observatories. The comprehensive Crossley survey of the rger spirals was inaugurated about six years ago by Mr. Curtis nd it has been continued up to the present time as the other emands upon the instrument permitted. At the time of pubshing the Keeler volume of spiral nebulae and clusters the rossley collection of photographs included 104 of the largest bjects. The collection now consists of:

Spiral nebulae	477
Diffuse nebulae	47
Planetary nebulae	74
Globular star clusters	43
Other star clusters	11

This tabulation neglects the thousands of very small nebulae found on the plates, and, in fact, includes only those of sufficient size to be valuable for studies of nebular structure. It is planned to continue this work until between 200 and 300 additional bright or large objects have been recorded. The region of the sky richest in spirals is unfortunately so situated as to be available for observation to advantage only in the spring months, when observing conditions are the poorest, and accordingly the program cannot be completed for several years.

The great value of this extensive collection, believed to be by far the most extensive in existence on such a large scale, has been shown recently in various ways. It has afforded data for the study of absorption or occulting effects in the spiral nebulae. It is characteristic of the spiral nebulae that they are of enormous dimensions in what we may call their equatorial diameters and relatively very small in their polar diameters. The ratio of equatorial and polar diameters may be estimated as 5, 6, 7, or 8 to 1. Now it has been found that a very large proportion of these spirals which present themselves almost exactly edgewise to us show a dark or absorbing lane running centrally throughout the length of the nebular image. Relatedly, a considerable proportion of the greatly elongated spirals, whose principal planes make a small but appreciable angle with our line of sight, give evidence of similar absorption effects. When such spirals show asymmetry of apparent structure, this asymmetry is in general parallel to the major axis of the projected ellipse. It manifests itself as dark lanes in the nebular structure, prominent on one side of the major axis and evanescent on the other; or in a fan-shaped central part with the nucleus at the radiating center; or in a nucleus apparently displaced along the minor axis; or in a much greater brightness of the nebular materials on one side of the longer axis, or in various combinations of these effects. It seems certain that occulting or absorbing materials forming the outer structure of the spirals, and located in or near their principal planes, are the responsible cause. Mr. Curtis has found more than seventy spiral nebulae in which these effects are unmistakable. His work on this subject goes far to establish that these absorbing or obstructing phenomena are a general characteristic of spiral nebulae. The half-tone blocks and the manuscript of description and deduction are all but ready for the printer, to appear as a Semicentennial Publication.

In March, 1917, while studying the Crossley photographs of nebulae, Mr. Curtis discovered a "new star" of about the fourteenth magnitude which had appeared in the spiral nebulae N. G. C. 4527 shortly before March 20, 1915, and which has since disappeared. The occurrence of such novae in the spiral nebulae, of which this is the third example, is a fact of great interest, and appears to furnish weighty evidence in favor of the theory that the spiral nebulae are, in effect, separate and very remote universes, vast congeries of stars so distant that the most powerful instruments are inadequate to resolve the individual stars.

It has long been known that the spiral nebulae are scarce in
l near the Milky Way and very plentiful in the remainder
the sky. In fact, they become plentiful as one proceeds
vard the poles of the Milky Way. This peculiarity of distri-
tion is one of the most remarkable facts recorded in the litera-
e of astronomy, and the search for the explanation is in the
efront of present astronomical inquiry. Why do the spiral
bulae seem to avoid the Milky Way? Are they within our
llar system, or are they distant and separate universes of
rs having no geometric or dynamic connection with our stellar
stem? Are those outer systems clustered in two gigantic vol-
nes of space, our stellar system happening to lie between them?
e those distant systems distributed somewhat at random and
tually existent in all general directions from our system, their
parent absence in the direction of the Milky Way regions find-
g its explanation in the existence of intervening matter which
events us from seeing them? Two years ago, on my sugges-
on, Mr. Sanford, Martin Kellogg Fellow in the University,
dertook to make such study of these questions as the existing
served facts, and the time of the Crossley reflector available
r securing additional facts, would promise to make useful.
his study and the provisional conclusions therefrom are de-
ribed in Lick Observatory Bulletin No. 297. Quoting Dr. San-
rd's concluding paragraph:

"Briefly stated, an arbitrary and general distribution of the
iral nebulae is harmonized with the distribution that presents
self to observation, by means of the hypothesis of an obstruct-
g medium irregularly distributed throughout the Galaxy. The
lar system is assumed to lie to the south of the median plane of
e Galaxy and near its short axis, but within the realm of the
structing material."

It is not affirmed by Mr. Sanford that this conclusion has
en definitely established, but we may safely say that the evi-
nce presented by him, combined with several other lines of
idence, notably that collected by Mr. Curtis as to the existence
occulting or absorbing matter in the outer reaches of the
iral nebulae, makes the explanation both plausible and prob-

able. It is a closely related hypothesis that our own stellar tem if viewed from a stupendous distance would be seen to a form approximating, and perhaps duplicating, that of the ventional spiral nebulae. We have said that evidence for existence of occulting or absorbing matter in the outer struc of the spirals and in the structure of our Milky Way is exc ingly strong, and in various ways as we pass from the spira our stellar system, and vice versa, we find points of corresp ence. It will be no surprise if future generations of astronor are able to establish definitely that our great stellar syster but one of myriad stellar systems, more or less completely i pendent, which stretch out in all directions through infi space. By way of precaution, I should not like to be underst as stating that such is an established fact.

The extensive program of measuring the motions of appro and recession of the gaseous nebulae, at Mount Hamilton Messrs. Campbell and Moore, and at the D. O. Mills Observat in Chile by Dr. Wilson, is nearing completion. A dozen nig devoted to this subject at Mount Hamilton and twenty nights Santiago, Chile, in the fall months of 1917 should exhaust list of all such objects bright enough for observation. grouping of these objects in and near the Milky Way, that at two opposite parts of the sky for the observers in each he sphere, and the long exposures required, extending in some ca up to thirty hours, have prevented the more rapid completion the investigation. The velocities of 124 planetary nebulae a other nebulae with bright-line spectra have been determined date. In the early winter, after the remaining observations sh have been secured, the resulting velocities will be discussed b statistically and individually and the work will be described i Semi-Centennial Publication.

The investigation of the rotational and internal motions planetary nebulae, begun in the latter part of 1915 and describ in my last report, were conducted with fruitful results in t past year. In fact, all of the planetaries visible from Mou Hamilton which are bright enough to permit of observati with high dispersion exposures have been observed in this co ion. In the academic year 1916–17, 112 such spectrograms e secured. Of the 42 planetaries observed 18 have given definite evidence of rotational motions, or of relative motion in them. For 13 others there is evidence of slow or very rotations or internal motions. In 11 cases the observations e failed to show any variation from the fixed state. In gen- , the larger planetaries, and likewise those nebulae whose tic outlines have the greatest eccentricities, afford the strong- evidences of rotational motions. The smallest nebulae and se whose outlines are nearly circular are the ones for which tests for rotation have failed. Our observations indicate in eral that the outer strata of the rotating nebulae are rotating e slowly than the inner strata, both angularly and linearly. this respect there exists a close analogy to the motions within solar system: the planets of the system revolve around the the more slowly both in angular and in linear measure the ater the distances of the planets from the sun.

Several of the larger planetary nebulae, notably N.G.C. 7662 l N.G.C. 2392, have spectra whose lines are strongly doubled. have made a study of this phenomenon from the point of w of all possible explanations which suggest themselves to us, efly by means of polarization tests. Using high dispersion and rious pieces of auxiliary apparatus for detecting different alities of polarized light, we have been led to decide against presence of a magnetic field in the nebulae, known as the eman effect, and to recognize the possible presence of an elec- c field responsible for the so-called Stark effect. However, simpler explanation seems more probable: that the doubling of e lines and their other characteristics may be due, first, to the oadening of the lines, arising either from the motions of ap- oach and recession of the particles or from a relatively high essure of the gases in the central volumes of the nebulae, and e introduction of a medial absorbing line upon the broadened ight line, the absorption proceeding from an outer stratum of ns of lower temperature. All of the several planetaries in which is peculiar form of line has been observed belong to a particular spectral type in which the line 4686A, usually attributed to helium, is strong.

Messrs. Moore and Campbell have brought almost to completion their study of the motions of approach and recession of various parts of the Great Nebulae in Orion. Forty-three long-exposure spectrograms were obtained for this purpose within the year. A few additional exposures on the fainter outlying parts of the nebula remain to be secured next November and December prior to the publication of the results. In addition to confirming the observations of last year, we have established that the detached nebulous structure 7′ north and 4′ east of the Trapezium group of stars in the center of the Orion Nebula is receding from our position in space with a speed of about 8 km./sec. with reference to the speed of the Trapezium region.

A special study of the two planetary nebulae N.G.C. 6543 and N.G.C. 7009 as to their rotations, internal motions and photometry has been made by Dr. Green, and published in Lick Observatory Bulletin No. 298.

In addition to the nebular spectrograms, 238 exposures for determining the motions of approach and recession of stars have been secured at Mount Hamilton within the year. Many of these are of spectroscopic binary stars or other stars of special interest.

The work of the year in Chile consisted of about twenty long-exposure spectrograms of nebulae and of 480 spectrograms of stars. All of them have been measured by Dr. Wilson and Mr. Scott. The additional observations of the bright-line nebulae in the Greater Magellanic Cloud are confirmatory of the preceding years' work as to their abnormally high recessional velocities. No exceptions to the rule have been found. The hypothesis that the Greater Cloud as a system is receding rapidly and is dynamically separate from our Milky Way system has been given added strength. Dr. Wilson has found that two or three stars in the Greater Cloud whose spectra are of the Wolf-Rayet, or special bright-line, type appear to be receding from us with high velocities of the same order as the nebulae. He has measured apparent motions of several faint stars which seem to be in Greater Cloud, but they do not conform. Unfortunately it not possible to say whether these stars, apparently ordinary ars in all their characteristics, are actually a part of the Greater oud or lie between us and the Cloud and appear to be mem-rs of the Cloud merely as a projection effect.

Dr. Moore has published a list of six spectroscopic binary ars discovered by virtue of their variable velocities as recorded the spectrograms secured by him when in charge of the D. O. ills Expedition.

Similarly, Dr. Wilson has published a list of four spectro-opic double stars, and a considerable list of binaries found by im awaits publication.

Dr. Paddock has announced the binary character of six vari-ble stars whose spectra were observed by him several years ago hen an assistant at Santiago, Chile. He has likewise completed nd published the orbit of the interesting spectroscopic binary ystem h Centauri, on the basis of observations secured by him Chile.

Acknowledgments are due to Messrs. Paddock, Shane, cott, and Neubauer for assistance in securing many of the ex-osures referred to above, and to Miss Hobe, Dr. Paddock, and Ir. Scott for very extensive help in the measurement of the lates.

The very important study of the structure and composition f the planetary nebulae by Mr. Wright, described in last year's eport, has been carried through the present year, chiefly with he slitless quartz spectrograph in connection with the Crossley reflecting telescope. The program includes all the planetary nebulae which it is practicable to observe with this instrumental quipment. It is hoped that this programme of observation will be completed in July and August, 1917. The results confirm the view that very high temperatures are an important characteristic of the nuclei of these nebulae, a fact which is of significance in every theory of stellar evolution. The detailed results of nebular composition and structure proceeding from this work are in preparation for issue in the Semicentennial Publications.

Mr. Tucker has extended his investigation upon the dependence of atmospheric refraction upon the time of sunset and sunrise. One thousand observations of the zenith distances of stars made by him with the meridian instrument were used in the solution of this problem. He has found that the atmospheric refractions determined at the Pulkowa Observatory of the Russian government, and extensively used at many observatories in correcting their meridian observations for prevailing atmospheric conditions, are too large to represent the refractions at Mount Hamilton during the night hours and too small to represent them during the daylight hours. The observed refractions at Mount Hamilton agree in size with the Pulkowa refractions at one hour before sunset and at one hour after sunrise. The amount of the variation is close to one per cent of the total refraction correction; a quantity entirely too large to be neglected. Mr. Tucker's discussion of the subject indicates that there is an essentially uniform progressive variation for the period one hour before sunrise to four hours after sunrise and a similar reversed variation for the period four hours before sunset to one hour after sunset. It is the custom to compute the refractive effect for an observed star upon the basis of the barometer and thermometer readings just outside the observing room at the time of making the stellar observation. It would seem that the barometer and thermometer readings represent the atmospheric conditions satisfactorily only at the two instants, one hour after sunrise and one hour before sunset, and that at other times of the day slight but sensible corrections are required in order to represent the facts.

Early in 1917 Mr. Tucker began to observe the accurate position of 1074 selected stars from the Harvard northern Zone of the Astronomische Gesellschaft Catalog, these observations to serve as the basis for determining the positions of great numbers of additional stars in the same zone of the heavens by photographic methods. The photographs and their measurement are to be made by the Allegheny Observatory, and our share of the work has been undertaken at the request of Director Schlesinger of Allegheny. More than one-third of the selected stars have been served to date and the computations have been started. This rk will extend through the present academic year.

It is of interest to note that Mr. Tucker's industry has led to uring about 40,000 meridian circle observations to determine e extremely accurate places of more than 10,000 stars during e period of his service, which began in the year 1893. The mense task of reducing these observations has been carried rough by him alone, with negligible exceptions. The corre-onding discussions of the results have been made and the data sued in three volumes of publications of the Lick Observatory. this same period about 40,000 readings have been made upon e graduation lines of the divided circles in order to determine e size and sign of the graduation errors.

From July 1, 1916, to March 15, 1917, using the 36-inch fractor about two nights per week, Dr. Aitken has continued is studies of double stars. Fifteen new pairs were discovered this interval, though very little effort was devoted to the arch. He has secured 752 complete sets of measures of the lative positions of the pairs of stars forming the doubles. hese relate chiefly to the doubles discovered by himself. His measurements of the doubles after an average interval of leven years following discovery show definite motion in about ne-fifth of the pairs thus far measured, and what we may call apid motion in about one-tenth of them. He has at the same ime continued his observations of the more difficult well-known ouble stars and has made interesting deductions as to the orbits f several especially interesting pairs. He found, for instance, hat the well-known binary, Zeta Boötis has an orbit possessing he remarkably high eccentricity 0.96. Three orbits have been etermined and published.

Mr. Shane is investigating the changes which occur in the pectra of certain variable stars as functions of their brightness.

Micrometer observations of the positions of comets have been ade by Messrs. Aitken and Shane as required by the Berkeley stronomical Department for the determination of the orbits f comets just discovered.

It is not practicable to refer to several investigations of minor nature made within the year.

Dr. Curtis was absent during the first five weeks of the ac demic year as officer in charge of astronomical teaching at th Summer Session of 1916 in the University of California.

Dr. Aitken has been absent on leave from March 15, 1917, du to return on July 15. In this interval he has delivered mo than twenty lectures on astronomical subjects in universiti and other institutions of the Middle and Atlantic States; he ha secured valuable information at Harvard College Observato on the character of the spectra of double stars through the cour esy of Director Pickering; and he has engaged in the prepar tion of the manuscript for a volume on "The Binary Stars. which should be ready for the printer about the middle of th coming winter.

The six Adolfo Stahl Lectures in the Astronomical Societ of the Pacific were delivered by Messrs. Campbell, Aitken, an Curtis in San Francisco during the winter and spring month The annual lectures in the Berkeley Astronomical Departme in the spring of 1917 were delivered by Messrs. Campbell an Wright. A considerable number of additional lectures we delivered within the year in central California by Messrs. Cam bell, Aitken, Curtis, and Moore.

The honorary degree of Doctor of Sciences was conferre upon Dr. Aitken by Williams College at the June Commenc ment.

As retiring President of the Pacific Division of the Americ Association for the Advancement of Science, Mr. Campbell deli ered an address in San Diego in August, 1916, on "What W Know About Comets." As retiring President of the Americ Association for the Advancement of Science, Mr. Campbell d livered an address on "The Nebulae" in New York City, o December 26, 1916.

It is well known that increased financial resources for th Lick Astronomical Department are highly desirable, both widen and intensify the scope of our research activity and compensate for the immensely reduced purchasing power oney. I have purposely refrained from writing on this subject, owever, because of financial conditions proceeding from the ternational relationships of our country.

The indications are that the fulfilling of various duties grow- g out of the state of war will affect the output of investiga- onal results in the coming year.

Respectfully submitted,

W. W. CAMPBELL,
Director.

DEAN OF THE LOWER DIVISION

July 1, 1917.

To the President of the University,

Sir: I have the honor to submit herewith a report on the wor of the office of the Dean of the Lower Division for the year ending June 30, 1917.

In my report of last year I called attention to the nature o the duties of this office, pointing out those which had to d strictly with the lower division and others that pertained as wel to upper division students. With the establishment of the offic of the Dean of the College of Letters and Science, a number o questions of the latter type will be assumed by this Dean. Som overlapping of function between these two offices is perhaps stil inevitable, but with the growth and development of this ne deanship, a sharper line of division will be possible.

With the completion of Benjamin Ide Wheeler Hall, wit the consequent increased room facilities, there is less congestio in the lower division courses, though there is still some complain that many of the rooms are too small to accommodate the se tions. I believe, however, that this tends toward the establishment of smaller classes and thereby increases teaching efficienc Toward this latter end, too, the Committee on Courses has bee equalizing the amount of work required per unit value in al courses throughout the University, and this is particularly ben ficial in the lower division in that it makes it less easy for a stu dent to select a programme of courses improperly balanced.

The plan adopted in 1915 to invite Senior men to assist thi office in advising incoming freshmen was continued throughou last year. This was found to be a very useful procedure durin the opening days of the semester, but the relationship was no ontinued systematically beyond the opening weeks. On account f war conditions, which have drawn away a great many upper-lassmen, together with an uncertainty in the minds of others hether they will be able to return to college, it has been impos-ible to organize the Senior advisors for the coming year. How-ver, it is hoped that the services of a number of the Seniors will e obtained during the opening days to assist the incoming reshmen.

The work of inspecting and approving boarding houses for nen and women students was centralized during the last year nd placed under the direct supervision of Mrs. M. B. Davidson. This should prove a decided benefit both to the University and hose persons desiring to have their houses on the approved list. ormerly separate inspectors were provided for those applying o be on the approved list for men and those applying to be on he approved list for women. The new arrangement will insure niformity of standards between the two types of houses and, lso, continuity of the relationship between the proprietors of hese boarding houses and the University. While several hun-dred apply annually for the privilege of being placed upon these pproved lists, the number of applications for the coming year shows a decrease over the number who applied in 1916. The supply of good houses is, however, still in excess of the demand. The number of boarding and lodging houses approved for the all semester, 1917, is 186. Of these, 100 are for men and 86 for omen.

The plan adopted last year of making public the scholarship verages of fraternities has been found to be very beneficial. Much interest has been shown by the public, particularly in the verages covering the four-year period. Owing to the great num-er of fraternity men withdrawing for military service before he final examinations in May, and as a consequence not receiv-ng the usual numerical grades for the term's work, it has been ound impracticable to attempt any statistical investigation of he relative standings of fraternities for the last semester. These computations will, however, be resumed at the end of the ext semester.

War conditions have brought about many new problems in connection with the undergraduate life of the University. Owing to the great number of enlistments from certain of the fraternities, their houses will find it more expensive to run. Many of them are under obligations to continue leases, or are paying for their own houses on the installment plan. Unless they are successful in increasing their membership from the incoming freshman class to the normal number, the burden on those remaining will be considerably increased.

Another problem of considerable importance is the question of maintaining student government. With the decreased number of upperclassmen, and particularly of Seniors, this will be more difficult. However, the students of this University are always ready to assume responsibilities, and I have no fear but that they will meet their problems and solve them creditably.

Respectfully submitted,

T. M. Putnam,
Dean.

MEDICAL SCHOOL

San Francisco, July 1, 1917.

To the President of the University,

Sir: With the completion of the University Hospital, the Medical School has added a great clinical unit to its plant. Not only are the clinical facilities offered each department more than doubled, but the perfection of equipment, the provision for adequate operating room, X-ray, and laboratory space, greatly increase the value of the hospital for teaching purposes. The Out-Patient Department, however, has outgrown the present quarters and is being operated under increasing difficulties. A new building should be erected in line with the new hospital and large enough to house the Out-Patient Clinics on the lower, and the Departments of Anatomy and Pathology, on the upper floors. The Out-Patient Department is proving itself to be more and more a valuable part of the Medical School, and it should be correlated intimately with the hospital. Various special clinics for the care of diseases of the heart, lungs, metabolism, etc., should be established and opportunity given for fuller development of social service work. Departments of radiotherapy as well as hydrotherapy and mechanotherapy should be instituted in a part of the new building so that they could be of service both to hospital and to ambulatory patients.

Such a building would bring the entire school together, for money has already been provided by the Legislature for the transformation of the present hospital building to the needs of the Departments of Physiology and Biochemistry. Every endeavor should next be made to provide a suitable nurses' home on the site south of the new hospital owned by the University.

As soon as the museum can be moved, this building should provide space for administration offices, for the library, and for student purposes. The present library rooms are wholly inadequate and much additional space will be required when the libraries of the departments now in Berkeley are moved to the Medical School. During the past year, through the liberality of Mrs. A. F. Morrison, a very complete ophthalmological collection has been added to the library. Through purchase, the library of Dr. Charles von Hoffman has been acquired and is to be known as the Charles von Hoffman Gynecological Library. In memory of Dr. William Watt Kerr, Mrs. Kerr has given his library to the Medical School, the collection to be known as the William Watt Kerr Medical Library.

It will be impossible to prepare a well-balanced schedule until all our departments are together in San Francisco. Conservatism should rule in future changes in the curriculum. The aim should be a more elastic schedule, and a better division of the student's time in the various departments and in his intern time in hospital.

The increased number of patients in the new hospital will demand more time from the clinical staff while new laboratories and better ward facilities will increase the number of teaching hours. The University cannot at present afford to establish full-time clinical positions, although this is its announced policy for the future. More part-time men and women must be appointed and paid small salaries, or, in lieu of this, given more clinical opportunities.

The war has brought many problems to the Medical School. Proper provision has been made to carry on an efficient teaching organization next year and to help with outside duties that have offered. The personnel of Base Hospital Unit No. 30 has been completed and the unit is now waiting orders of the War Department. This will deprive the University of the services of the following valuable men:

Dr. Eugene S. Kilgore
Dr. Alanson Weeks
Dr. Howard E. Ruggles
Dr. Louis P. Howe
Dr. Nathan P. Wood
Dr. Carl L. Hoag

Dr. Jule B. Frankenheimer	Dr. Hudson Smythe
Dr. Elbridge J. Best	Dr. Arthur C. Gibson
Dr. Arthur L. Fisher	Dr. J. Homer Woolsey
Dr. Chas. M. Richards	Dr. John M. Rehfisch
Dr. Ernest H. Falconer	Dr. Malcolm Goddard
Dr. Harold W. Wright	Dr. C. R. Giles
Dr. Herbert S. Thomson	

Dr. Lucas, Professor of Pediatrics, has been entrusted with an important mission from the National Red Cross to investigate health conditions among women and children at home and n the countries of our allies. Drs. Baldwin and Abbott are now in England as members of the American Orthopedic Commission.

Arrangements have been made in the University Clinics for the examination of candidates for the Aviation Service of the Army. Members of the faculty are aiding in the investigation of clinical and research problems or serving on various commissions of the State, and still others have become members of the Reserve Corps of the Army or Navy, and will be subject to call from their present duties during the next year. Sixteen men of the last graduating class have become medical officers in the Navy and many graduates of the School are now in the service of the Army or Navy.

Reports of the several departments constituting the Medical School follow in summarized form.

Respectfully submitted,

Herbert C. Moffitt,
Dean.

SUMMARY OF MEDICAL SCHOOL REPORTS

SUBMITTED TO THE DEAN BY DEPARTMENTS

Anatomy.—Enlarged quarters have increased the department's experimental facilities. The instruction by the department continues as in 1916–17 with the exception of the offer of several new elective courses. Professor Moody has taken over the supervision of anatomical instruction for general University students majoring in Physical Education and Public Health.

The research activities consist in experimental analyses of the behavior of the tissues and organs of the embryo and of the adult. Professor Evans has continued his studies on the action of vital stains. Investigations on the pathological histology of experimental infections produced by Bang's bacillus of contagious abortion were continued in conjunction with Professor Karl F. Meyer of the Hooper Foundation. Professor R. O. Moody has prosecuted investigations on the behavior of the living placenta to dyestuffs. Dr. J. A. Long, of the Department of Zoology, has undertaken an extensive study of the physiological anatomy of the mammalian ovary. Assistant Professor G. W. Corner has reinvestigated the origin of the corpus luteum of the pig. Dr. P. E. Smith has taken full advantage of our improvements in equipment for experimental amphibian work which was reported as begun last Spring. Dr. Katherine J. Scott has brought to completion our study of the cytology of connective tissue cells stained vitally with acid azo dyes. Dr. John S. Marshall has been concerned with studies on the peridental membrane and periosteum and in addition has attacked the whole question of the physiological anatomy of tooth growth and nutrition by means of diffusion and precipitation reactions with vital stains.

Dr. Ralph W. Sweet, formerly in charge of illustration at the Mayo Clinic, Rochester, Minnesota, has taken charge of our scientific illustrating and in order to extend these advantages generally to the Medical School will be concerned in the illustration of articles intended for publication by other departments, though on appointment with us.

Three papers and demonstrations were presented at the December meeting of the American Association of Anatomists held in New York. On January 12, Professor Evans gave an address before the Biological Association of the University of Missouri, ''On the Present Status of Some Problems of Cell Specificity.''

Biochemistry and Pharmacology.—Alterations to the Physiology Building have materially alleviated the serious condition of congestion which existed last year. Great difficulty has been experienced by Pro-essor Wasteneys, however, in organizing the laboratory course in Pharmacology, owing to lack of necessary equipment. The addition of anther instructor to the Biochemistry staff has rendered the teaching of his subject much more efficient.

Professor Robertson has continued his researches upon the physiology nd biochemistry of growth. The growth-controlling substance, tethelin, which he succeeded two years ago in isolating from the anterior lobe of the pituitary gland has turned out to be of considerable value for accelerating the repair of slowly-healing wounds. Arrangements have been concluded whereby the ownership of Professor Robertson's patents covering the manufacture of tethelin has been transferred to the Regents of the University, in order that any proceeds which may ultimately accrue from its manufacture and employment in therapeutics may be utilized to form the nucleus of a "University of California Foundation for International Medical Research."

Professor Wasteneys has initiated investigations on the phenomenon of tolerance. Dr. Sundstroem has been continuing his investigations upon acclimatization. Dr. Marshall has continued his investigations on the relation of the composition of saliva to the incidence of dental caries. Dr. Delprat has carried out very extensive measurements of the effect of tethelin upon the growth of suckling mice. Dr. C. L. A. Schmidt, in collaboration in part with Dr. E. S. May, has carried out a series of important investigations upon the pharmacological actions of tethelin and of its split-products.

Dr. A. H. Rowe has been investigating the effects of tethelin and of extracts of the posterior lobe of the pituitary body upon the concentration of glucose in the blood. Mr. S. A. Waksman has been investigating the metabolism of fungi found in soils. Messrs. H. S. Hoyt and I. F. Harris have added an important contribution to our knowledge of the origin of the toxicity of ultra-violet light for lower organisms. Messrs. J. McQuarrie and S. Hansen have improved our present methods of determining the indican in urine. Messrs. J. McQuarrie and S. Hansen, Z. B. Coblentz, G. W. Clark and Miss V. M. Bathgate have investigated the influence of a variety of conditions and substances upon the relative proportions of the various proteins in blood. Mr. D. D. Waynick has investigated certain chemical aspects of the actions of the ammonia-forming organisms in soils.

Medicine.—Several projected developments in the department have been postponed on account of the demands made by the war upon the faculty. Fortunately it has been possible to organize the important division of clinical pathology with Dr. S. H. Hurwitz at its head. A new group of student laboratories has been equipped in the old hospital building and, with proper technical assistance, Dr. Hurwitz will be able to place the teaching of clinical pathology on the proper basis.

Growth of the Out-Patient Department has required certain changes in the former hospital building in order to provide additional space for special clinics. It has proved advantageous to divide the general medical clinic into several divisions dealing with specialties such as gastrointestinal diseases, diseases of the heart, syphilis, etc. It has become necessary for the proper teaching of the important subject of physical diagnosis to provide several small teaching rooms and to place instruction in the hands of a special staff.

In April the department suffered an irreparable loss in the death of Dr. William Watt Kerr, for twenty-five years Professor of Clinical Medicine in the Medical School. His important department in the San Francisco Hospital will be in charge of Dr. Ebright.

A number of articles have been published during the past year by members of the staff:

Dr. Moffitt: Tumors of the Kidney, Cal. State Journal, July, 1917.

Dr. Ebright: Infectious Endocarditis, Journal A. M. A., Dec. 23, 1917. Vol. LXVII, pages 1927–8.

Dr. Kilgore: Typhoid Quotients, an Analysis of the Factors of Uncertainty in the Cutaneous Typhoidin Test. Arch. Int. Med., Feb., 1917. Vol. XIX. A Comparison of Two Methods of Vaccinating against Typhoid Fever. *Ibid.* The Agglutinins and Complement-Fixing Antibodies in the Serum of Persons Vaccinated against Typhoid Fever [with Dr. K. F. Meyer]. *Ibid.*

Dr. Whitney: Co-operative Medicine: Relation to Social Insurance. Cal. State Jour.. Nov., 1916. Acidosis: A Summary of Recent Knowledge. Boston Med. & Surg. Journal, Feb. 15, 1917. Vol. CLXXVI, No. 7, pp. 225–31.

Dr. Best: Refractional Examination of the Stomach Content. Journal A. M. A., Oct. 7, 1916. Vol. LXVII, pp. 1085–6.

Dr. Lisser: The Eye, Ear, Nose, and Throat in Diseases of the Thyroid and Thymus. Ophthalmic Record, Sept., 1916. Vol. 25, p. 433.

Obstetrics and Gynecology.—Our chief interest during the year has been the development of plans for fully utilizing the increased clinical opportunities afforded by the new hospital. To this end much attention has been paid to the development of the ambulatory clinic. This has increased in a satisfactory manner, the attendance being fifteen per cent more than that of the previous year. The Departmental Secretary was utilized chiefly for the development of the ''follow-up'' system. Under her direction ninety per cent of all hospital patients have been kept under observation until finally discharged by the department, giving us material for study which has been observed more closely than that of nearly any similar department in an American institution. Accurate data has been obtained by this means which has not yet been reported in medical literature.

The resident hospital staff has been increased to four by the appointment last July of an Assistant Resident. This has somewhat relieved the urden of the clinical routine, but has not helped the difficulties attendng the proper preparation of pathologic material for study. The department has not yet been able to include the service of a laboratory echnician.

The teaching problem has proven much of a burden during the last ear. The clinic has made constantly growing demands on the time f a small staff, composed chiefly of men who are offering a limited number of hours to the University without financial reward, and partially of younger assistants who are not yet developed so that they are valuable as teachers. Two of the staff have been assigned to the San Francisco Hospital to develop our service and do the teaching there.

No investigated work has been undertaken by the department, save one relating to the blood carbonates in the toxaemias of pregnancy, by the Resident, L. A. Emge. Several of the staff have addressed medical meetings in various parts of the State.

Pathology and Bacteriology.—The undergraduate course in Bacteriology was taken by 166 students. Nineteen graduate students have been enrolled in research courses, and other advanced students, some of them graduates in medicine, have availed themselves of the opportunities of the department and have contributed in large degree to its productive output. Medical instruction has proceeded in the usual manner. During the absence of Professor Gay in the East on Sabbatical leave the instruction in Immunity was given by Professor Hall and Miss Griffiths. A new course of seminar of interest both to medical and non-medical students, on Immuno-Chemistry, will be offered by Dr. Schmidt, a research worker in this department, who is one of the few investigators in the world fitted to present the problems of this important subject.

The investigations in typhoid with which several members of the department have been concerned in the past three or four years have been further continued, and certain aspects of them may be regarded as having been carried as far as possible with the opportunities and qualifications of this department. Dr. Gay and his collaborators have treated ninety-eight cases of typhoid fever with extremely good results as regards diminution of mortality and abbreviation of the course of the disease. The department is still interested in continuing its studies in relation to the typhoid carrier condition, which represents the outstanding problem that has been least successfully attacked in this disease. An extended monograph treatise on typhoid fever considered in relation to its epidemiology, pathogenesis, diagnosis, prevention, and treatment by Dr. Gay is nearly finished, and will be published through the book trade, but issued under the auspices of the Semicentennial Series of University Publications.

During the last six months the major research activities have been shifted to the perennial problem of tuberculosis through our great interest in the work of a Japanese graduate student who has been working as a volunteer in this department for nearly three years. Dr. Takeoka, after years of investigation here and elsewhere, has obtained what must be regarded as a most striking therapeutic result in experimental tuberculosis by means of a normal constituent of the mammalian body, taurine. In collaboration with the Department of Biochemistry he has been able to obtain this substance in considerable amounts from the abalone. This work has recently been presented in the form of a preliminary communication. An extensive investigation of the important possibilities which this work suggests has been begun by a number of the members of the department. Dr. Gay and Miss Stone are undertaking further investigations of the experimental aspects of the problem, and Dr. Gay, in conjunction with Dr. von Adelung of Oakland, is beginning a cautious adaptation of the suggested treatment in human beings. Mr. Schmidt, research chemist in the department, has given part of his time to the direction of the chemical studies in metabolism coincident with the clinical work, and to the preparation and synthesis of taurine. Great help has been afforded by the delegation to this department of an organic chemist, Mr. Watson, by the State Board of Health. This investigation, which is growing in importance, has naturally required financial aid. This has been guaranteed by donations from private sources, from the Research Committee of the American Association for the Advancement of Science, and from the State Council of Defense.

Dr. Cooke is at present engaged in the investigation of the bacteriology of leprosy. Dr. Schmidt has continued his work in protein chemistry, particularly in relation to the antigenic properties of pure proteins. Professor Hall, in spite of his excessive teaching responsibilities, has continued a number of investigations in which he was engaged, and embarked on new ones. He has in the last year been particularly interested in the study of the infections due to the Preisz-Nocard bacillus in guinea pigs, and more fundamental studies on the taxonomy and metabolism of anaerobes. In this work he has been aided by several graduate students, notably Mrs. Ellefson and Mr. Woods, and has obtained results of significance in food poisoning and food sterility. Dr. Rusk is continuing the study of certain interesting neoplasms and co-operating in a comparative histological study of the material available in the work on experimental tuberculosis already outlined.

During the past year there have been fourteen publications by members of the department, and six more are in press. In addition, several reviews have been published in bacteriological journals by Mr. Hall. Reference has already been made to the book on typhoid by Professor Gay. A syllabus on undergraduate bacteriology is practically ready for the printer.

As further activities of the department may be mentioned two addresses delivered in the East by Dr. Gay as retiring chairman of the Section of Pathology and Physiology of the American Medical Association and as retiring vice-president of Section K (Physiology and Experimental Medicine) of the American Association for the Advancement of Science. Dr. Gay has also been appointed a member of the National Research Council founded at the request of President Wilson by the National Academy of Sciences.

Pediatrics.—Few changes have occurred during this past year. We have developed our plan of intensive teaching of pediatrics for the third year, following lectures and demonstrations in the first semester by individual teaching of small sections of students in the Children's Clinic of the University Hospital in the second semester. During the fourth year all the work is individual section work.

We are sorry to lose Dr. Bolt, who, as a candidate for the degree of Graduate in Public Health, did a large part of his work in connection with the Children's Department. The subject of his thesis is: ''The Problems Presented to a Children's Department of a University Hospital in Meeting the Medical Social Needs of a Cosmopolitan City.'' His analysis of the chief causes of infant mortality in San Francisco makes a valuable study and his suggestions for further development of the department will form the basis of an enlarged program. Dr. Bolt goes to Cleveland to take charge of the Bureau of Child Hygiene of the Department of Health.

The growth of the Children's Out-Patient Department in the University Hospital during this past year has been satisfactory. The total attendance for the year was 10,349, an increase of 9.6 per cent over the previous year. We have continued the medical care of the San Francisco Nursery for Homeless Children. Our work at the Nursery has been of material benefit in raising the health standards of that institution and we feel it is a valuable contribution to the problem of institutional care of children.

The Social Service work has grown far beyond our resources during this past year. During the past year more than 1120 calls have been made by members of the Social Service Department for the Children's Department.

Dr. Louise Morrow was in charge of the field work of the students registered in Economics 118 and 258c during the first semester and 119 and 258d during the second semester. Supervised work was done by the students in the various social welfare institutions in San Francisco, Oakland, and Berkeley.

The work of the Psychological Clinic has continued actively throughout the year under the direction of Dr. Olga Bridgman. These clinics are connected with the San Francisco Juvenile Court, the Superior Court, the Berkeley Dispensary, the Charity Organization Society of Berkeley, and the San Francisco Nursery for Homeless Children. In all there have been nearly 1800 children examined since the organization of the clinic, more than half of them wards of the Juvenile Court. More than a hundred adult offenders were examined during this past year in the Superior Court and many scattering cases for the other agencies named. In February, the San Francisco Juvenile Court moved into the new Detention Home, and it is gratifying to report that a whole floor of the new home has been set aside for the development of the medical and psychological work, which is under the direct supervision of the Pediatric Department. No other pediatric department in this country has such an opportunity for studying these border-line problems.

The importance of speech defect work in the public schools was demonstrated to the Board of Education by our clinics, and Mrs. Mabel Farrington Gifford was appointed to organize a department for this work in the public schools. The Saturday Morning Clinic has been continued, however, giving an opportunity to others than school children for this special instruction. Mrs. Gifford has also held University Extension classes in the auditorium of the Anthropology Building.

Classes in corrective gymnastics for poorly developed children, and especially children with poor posture, were organized last Fall in connection with the Orthopedic Clinic by Miss Signe Haglethorn.

A great deal of attention has been given to local problems connected with the conservation of child life. In this work we are closely affiliated with almost all the charitable associations in San Francisco. Members of the department have co-operated with sixty different social welfare organizations in San Francisco and vicinity in presenting papers dealing with the various problems of childhood. Dr. Lucas has been asked to serve on a committee from the American Pediatric Society, which is drawing up a program on the conservation of child life in America for the Council of National Defense. During March the Pediatric Department co-operated with the Child Welfare Committee of the California Federation of Women's Clubs in arranging a series of lectures on child welfare by specialists of the Medical School preparatory to Baby Week.

Dr. Ash and Dr. Fleischner represented the Department at the State Medical meeting in San Diego in April. Dr. Ash read a paper on Mongolism and Dr. Fleischner a paper on ''Some Problems of Starch Digestion.'' An article on ''A Tumor of the Spinal Cord,'' by Dr. Ash, will appear in an early issue of the American Journal of the Diseases of Children.

In January, 1917, Dr. Lucas report on ''Health Conditions in Belgium'' was published in the Journal of the American Medical Association. Other papers, several of which will be read at Eastern medical meetings this summer, are ready for the press and will appear during the coming year.

Physiology.—The relative importance of the instruction work of the epartment continues to grow. The total number of student registrations during the year was 392, of which 43 were medical or pre-medical students. Crowded conditions, mentioned in the last report, have been only partially alleviated.

Notwithstanding the heavy instruction work, all the members of the department have been engaged in research during the year. Associate Professor Maxwell has continued his study of pituitary function, in conjunction with Miss Conkle and Miss Evans. Assistant Professor Burnett has continued his cancer work in collaboration with the Department of Biochemistry. Instructor Rosalind Wulzen has continued her investigations on the effect of the pituitary on growth and reproduction. Instructor Lillian Moore has been engaged in an investigation of the question of the existence of a temperature regulating-center in the brain. Assistant George H. Martin has devoted his time to the development of a technique for the quantitative determination of minute accounts of calcium. Assistant J. A. Larson has studied the effect of certain gland extracts on the growth of tissues in vitro.

Surgery.—The past year has seen no material change in our teaching personnel, but with the advent of war certain changes will be necessary in order that we may do our share toward providing medical men for the Army and Navy. Our loss will be in the younger men, particularly the assistants and internes. Our endeavor will be to so arrange our teaching that it can be carried on by a minimum number of instructors. More attention will be paid to war surgery than has been our custom in the past.

The Out-Patient Clinic has had a very busy year and the in-patient service has been filled to capacity most of the time. It has been rather difficult to take care of all the operations of the Department of Obstetrics and Gynecology, as well as the Department of Surgery, with its several sub-departments. From May 1, 1916, to April 30, 1917, a total of 2201 operations were performed by both departments.

The new University Hospital is now practically completed, and we confidently look forward to the realization of many hopes.

LOS ANGELES MEDICAL DEPARTMENT

LOS ANGELES, July 1, 1917.

To the President of the University,

SIR: I have the honor to submit herewith the report of th Los Angeles Medical Department for the year 1916–17.

The work has gone quietly forward along the lines of th plan originally mapped out, when this department became a school for graduates in 1914.

During the last year there has been a total of more than sixty medical men who have matriculated for graduate work. These doctors graduated from medical institutions throughout the United States, and some of the best known universities in th country are listed in the medical schools which have been thus represented. It is gratifying to be able to state that these men who have had the best training which America affords in th study of medicine, have seemingly been satisfied with the graduate work which has been placed at their disposal at Los Angeles

The work of the department continues to deal largely with courses having to do with patients, and applicants for matriculation are impressed always with the thought that they will b given as full an opportunity as possible to see and to do work but no inducement is offered in special lines, where the department feels its laboratory or other special facilities fall short o analogous courses given elsewhere.

The limited budget has made impossible the institution o certain changes which would add much to the teaching facilities but, in spite of the financial handicap, the work of the department has been quite satisfactory, and has been a source of pleasure and profit to both faculty members and students.

Respectfully submitted,

GEORGE H. KRESS,
Dean.

CALIFORNIA COLLEGE OF PHARMACY

San Francisco, July 1, 1917.

o the President of the University,

Sir: I have the honor to submit the following report of the ollege of Pharmacy for the year 1916–17.

Our classes were of the usual size, numbering fifty-eight atriculants and thirty-four graduates.

Two new members appear on the Board of Directors, Mr. K. . Bowerman and Mr. C. J. Abraham, having been elected to fill acancies created by the resignation of Mr. John H. Dawson and Ir. James G. Munson.

A course of study has been instituted in First Aid and Mili-ary Hygiene. The classes were coalesced for this course, owing the need for immediate preparedness from a military stand-oint. The didactic and demonstration work was conducted at he college, and followed by field drills at the Presidio Military eservation. All instruction was given by officers of the United tates Army. Thirteen volunteers from the graduating class, ugmented by two former graduates, have been ordered to Fort iley to complete their military training as Sergeants, First lass, Medical Enlisted Reserve Corps, United States Army.

It is the intention to make such training a part of the regular urriculum, thus rendering the school and its graduates capable f serving the military organization of the country. In this e will be aided in great measure by the proximity of the Gov-rnment reservations on this peninsula and on the islands in he bay.

Respectfully submitted,

Frank T. Green,
Dean.

UNIVERSITY OF CALIFORNIA PRESS

BERKELEY, July 1, 1917.

To the President of the University,

SIR: I hereby respectfully submit the following report fo the University of California Press for the year 1916–17.

During this period the Press has issued seventy-six contributions, in fifteen of the series devoted to the publication of th University's scholarly and scientific work and directly under th care of the University Press. Not included are the numerou bulletins and circulars of the Agricultural Experiment Statio the bulletins issued by the Lick Observatory and the Berkele Astronomical Department, nor the seventeen syllabuses, laboratory directions, and the like, published for assistance in the wor of instruction. The distribution of the scientific publications i the series and something of their extent, together with th amounts expended on the series, are shown in the tabulatio which follows this report.

The year's total output for the University Press was abou the same as that of the year before. There are on hand thirt five contributions on which no work has been done, includin works to be issued in the series of Semicentennial Publication There is therefore reason to anticipate that the requirements the University Press will put the University Printing Office an exacting test of its capacity, if we are not to be required arrange with outside printers for some of our work in order complete our programme of publication in 1917–18. I therefo urge that every attention be given to meeting as promptly as po sible the needs of the Printing Office for labor-saving and spa saving equipment.

The unusual pressure which the coming year's work will ing to bear on our University printing facilities is due mainly t the programme, initiated by the Editorial Committee five ars ago, for the publication of a series of special volumes to mmemorate the University's fiftieth anniversary in 1918. The litorial Committee has approved, subject to the completion of te work within the announced time limits and to final accept- ce when submitted in complete form, fifty-one projects for the micentennial Series, including some sixty titles and making, if appear, about fifty-eight volumes. Twenty-six volumes will pear, if published, under the imprint of other publishers; the mainder are to be cared for by the University Press. At this ne it is safe to say that circumstances will prevent the com- etion of a number of the projected works in time to make pos- le their publication in the spring of 1918. There will remain, wever, enough to add very materially to the amount of print- g which the University Press normally requires of the Printing ffice. Manuscript for only seven volumes is now on hand. Two the seven are already in type, and a third is well under way.

The problem of securing reasonably prompt publication for aterial accepted for our series has long troubled the Editorial ommittee. In January of this year, Professor Daggett, at the quest of the Editorial Committee, undertook an investigation the conditions controlling University printing, with the object discovering if possible the reasons for "seasonal variation" in e work of the Printing Office. The results were largely nega- ve, owing to the fact that data were not available for determin- ng the amount of work done month by month. The Editorial ommittee endorsed Professor Daggett's recommendation that a st-accounting system be installed in the Printing Office. Until ata gathered by the operation of such a system are available, e committee will remain unable to decide or advise as to the ost efficient manner of handling our printing work.

In November, 1916, an agreement was ratified whereby the niversity of California Press affiliated with the University ress Association of New York City, an organization instituted y the Yale University Press and the Harvard University Press

to facilitate the handling of university publications. Throug
this affiliation the University of California Press is represente
by an agency in New York, to the undoubted advantage of th
University's publications.

For a number of years the University Press has bee
publishing, in the so-called *Syllabus Series,* pamphlets contai
ing outlines of courses, laboratory directions and the like, in
tended to facilitate the University's work of instruction. R
cently there has been noted a well-defined tendency of this seri
to develop into something much more comprehensive than wa
contemplated when this line of publishing was undertaken. Th
Editorial Committee now finds it necessary to consider the r
sponsibilities of the University, as a publishing agency, towar
those members of the University who present well-founded pr
posals for the publication of text-books of university or colle
grade.

The College of Agriculture has put at the disposal of t
Editorial Committee the equipment of its photographic plan
and the committee, through arrangements with Mr. William
Matthews, has undertaken the experiment of operating, for t
benefit of all departments of the University needing the service
an office of scientific illustration. Thus far the results ha
been encouraging, and promise an improved standard of materi
submitted for reproduction as scientific illustrations. This ne
work is confined to such material for illustrations as can be ma
by photography.

Building operations on the University Library have reached
point which permits reoccupation by the Press of space in t
Library basement for storage of publications. This is a gre
relief. The transfer of the bulk of our stock from its year-lo
burial in the Sather Tower has been made. What remains
the Tower is for the most part reserve or waste material, whi
need not be moved until the rest of the stock has been sorted o
and shelved.

The following table shows the extent, costs, and sales of pu
lications during the year:

PUBLICATIONS ISSUED

Series	Papers	Pages	Plates	Net Expenditures
Aicultural Sciences	4	258	15	$1,046.11
Aerican Archaeology and Ethnology	7	277	6	988.56
Bany	9	226	35	1,079.19
ssical Philology	1	12	....	37.50
Egineering	5	178	....	693.22
tomology	1	152	....	391.40
graphy	2	74	....	231.20
ology	15	278	12	1,173.48
story	3	660	10	1,499.08
dern Philology	2	298	....	636.25
thology	2	58	....	186.25
chology	1	140	....	264.59
lletin of the Seismographic Station	2	60	....	233.25
mitic Philology	1	158	....	419.70
ology	21	496	69	2,274.42
Totals	76	3325	147	$11,154.20
iversity of California Chronicle				902.21
llabus series				120.63
fice expenses, advertising, assistance, postage, supplies, etc.				3,920.00
				$16,097.04

RECEIPTS FROM SALES OF PUBLICATIONS

gricultural Sciences	$32.41
merican Archaeology and Ethnology	85.46
tany	49.90
assical Philology	26.82
conomics	77.45
ducation	68.29
ngineering	16.20
ntomology	5.31
eography	5.79
eology	250.99
istory	351.47
athematics	5.46
emoirs	442.13
odern Philology	21.37
athology	12.70

Philosophy	1.62		
Physiology	23.28		
Prize Essay	2.57		
Psychology	66.14		
Seismology	.35		
Semitic Philology	3.61		
Zoology	159.18		
		$1,708.50	
University of California Chronicle		76.91	
Syllabi		1,582.00	
Sundries		23.75	
			$3,391.1
Graeco-Roman Archaeology			8.0
Lick Observatory Bulletin		19.00	
Lick Observatory Publications		45.01	
			64.0
Library Bulletin			9.7
Publications Academy of Pacific Coast History			41.0
*Announcement of Courses		226.66	
*Officers and Students		329.27	
*Register		3.75	
*Summer Session		.10	
			559.7
University Calendar		144.70	
College of Dentistry Lecture		.60	
English in Secondary Schools		1.66	
State Geological Survey Publications		8.50	
University Extension Bulletins		.45	
Weinstock Lectures		9.16	
			165.0
			$4,238.7

* Does not include sales through the Recorder's Office.

Respectfully submitted,

A. H. Allen,
Manager.

SCRIPPS INSTITUTION FOR BIOLOGICAL RESEARCH

LA JOLLA, CALIFORNIA, July 1, 1917.

the President of the University,

SIR: In recognition of the present national emergency, this
ar's report is written more with reference to the possible use-
lness of this Institution in the immediate future than as a
rrative of work during the last twelve months. The time has
me to apply the results of our research to the solution of the
actical problems which confront us. It is undoubtedly incum-
nt upon the Institution to do its utmost to solve such problems
fall within the scope of its activities.

The Pacific Ocean, adjacent to the continent of North
merica, is very rich in plant and animal life. Until recently,
wever. the only commercial industry of large proportion com-
rised the salmon fisheries of the northwestern coast. The last
w years have witnessed a rapid development of fishing indus-
ies. Whaling has been recommended now for human food in-
ead of merely for oil. The long-finned albacore, *Thunnus ala-
nga*, canned and sold under the trade name of tuna, has become
n important product. The California sardine, *Sardinella
ruleus*, constitutes as large a portion of the total pack as the
lbacore. At present there are twenty canneries on the coast of
alifornia. Nearly 600 boats are engaged in the fishing, and the
alue of the product of the last year exceeds $4,000,000. A
ecent increase in the production of fresh fish should also be
oted.

The work of this Institution must be to co-operate with the

National Bureau of Fisheries, the State Council of Defense, an the California Fish and Game Commission, in bringing abou a greater use of sea productions for food, and in studying th problems likely to arise from this increased use. Two problen present themselves immediately. In the first place, more con plete information is desired with regard to the distribution fish, including such migratory species as albacore, yellowtai barracuda, and such all-year-round species as sardines, anchovie smelt, and mackerel. In the second place, various problems rela ing to abundance and depletability are already appearing an will demand study in order to safeguard the interests of tl future. We must determine what regulatory measures are d sirable in the interests of conservation.

The war presents a possibility of some change from tl present three-mile rule regarding coastwise fishing. The thre mile zone of maritime dominion has always been arbitrary an artificial, and the probability of some revision of internation law following the war, affords an opportunity to introduce zone founded on reason. The great fish-producing areas of tl ocean are in the comparative shallow waters near the lands, ar they are productive because they are near the lands. This fa suggests the conclusion that the edge of the continental she might be the limit of maritime jurisdiction.

The important additions to the Institution's "plant," described in my last report, were practically completed July 1, 1916. They were formally dedicated on August 9, 191 the exercises being participated in by the Right Reverend Jose H. Johnson, Bishop of Southern California; Benjamin I Wheeler, President of the University of California; David Sta Jordan, Chancellor Emeritus of Leland Stanford Junior U versity; D. T. MacDougal, Director of Botanical Research, Ca negie Institution of Washington; G. H. Parker, Professor Zoology, Harvard University; and Wm. E. Ritter, Scienti Director, Scripps Institution. The event was held in conjur tion with the San Diego meeting of the Pacific Division of t American Association for the Advancement of Science, and w attended by many visiting scientists.

The great usefulness of the new wharf has been increasingly ıifest as the year's research has progressed. This usefulness een most exceptionally, perhaps, in connection with the labtory experiments inaugurated this year by Dr. Esterly, with end in view of bringing into correlation the results of statisıl studies on plankton organisms and those of experimental dies on the activities of the same organisms. The utilization the wharf by Mr. Michael in his statistical plankton studies, l by Professor Kofoid and Dr. Swezy in their structural and tematic work on the Dinoflagellates is hardly less significant. paper setting forth some of the specially interesting subjects inquiry which could be advantageously prosecuted in connecn with the wharf will be published shortly.

The *Alexander Agassiz* was sold during the year, as this ıt was too large and expensive to operate for the particular ase of the marine investigations we are now entering upon. boat to take her place will be hired for this season.

The teaching experiment tried at the Institution for six eks during the summer of 1916 was not successful in its priıry aim. The hope was to attract a considerable number of ence teachers whose major purpose should be to acquaint themves with the investigations being carried on at the Institution, thout reference to formal university courses and credits. hile attendance was satisfactory from the local community, ry few teachers appeared. Plans for the coming Summer Seson provide for giving university credit to those who may care r it.

During the year the publication of the "*Bulletin of the ripps Institution for Biological Research*" has been begun, e expense to be borne by the Institution. The numbers will issued at irregular intervals, as matter is available, each numr usually containing a single title. The hope is that the ticles shall be composed and the distribution made with speal reference to those members of the community who, though ot themselves scientists, yet by reason of their callings or other terests, find it necessary to be informed on the results of scienfic progress in certain directions. The development of the Institution's aquarium and museum, now well advanced, also ha educative as well as technical motives.

A systematic account of each line of research being carri on at the Institution such as has been given in previous report is omitted this time. No essential departure from the plans a work of previous years has taken place during the past yea An important set of experiments on the inheritance of acquir characters, conducted by Dr. Sumner, has terminated this ye with negative results. Although such an outcome of an elabo ate experiment is always less cheering to the investigator th an affirmative outcome, even negative results, when clear-cut a decisive as these were, are highly important. It is as essenti both for research and for human welfare, to know what heredi does not do as to know what it is capable of doing.

Respectfully submitted,

William E. Ritter,
Director.

SUMMER SESSION

Berkeley, July 1, 1917.

the President of the University,

Sir: Under the able management of Professor C. H. Rieber,
an of the Summer Session from 1907 to 1916, the Summer
ssion had come to enjoy an enviable reputation. It was favor-
ly known to students and teachers throughout the country,
d attracted distinguished American and European scholars as
mbers of its faculty. The number of students increased from
2 in 1907 to 5364 in 1915.

In 1916 the program was the joint creation of Dean Rieber
ad of myself as his successor. Although an attendance con-
derably smaller than that of 1915, the year of the Exposition,
as expected, it was decided to use the surplus funds resulting
om that year in strengthening the curriculum. The names of
any of the best known American scholars were included in the
st of its faculty. The result was gratifying. The enrollment
as 3975. Of this number 1190 were men, and 2785 women.
here were 1961 teachers, of whom 912 came from the north,
8 from the south, and 661 from outside the State. Eight hun-
ed and fourteen registered also in the first semester of the
gular session of 1916–17.

Several courses were this year given for the first time.
mong these innovations should be mentioned the course in
riminology, organized by Professor A. M. Kidd of the Depart-
ent of Jurisprudence; the course for athletic coaches, made
ossible by the generosity of the Associated Students; and the
ntertainments in the Greek Theatre, arranged by Professor
Villiam Dallam Armes of the Department of English, who
cted as Director of the Greek Theatre in the Summer Session.

These entertainments were open, without extra charge, to students of the session. They included a noteworthy perfor ance of King Lear by the Players' Club of San Francisco. T creation by the University of the Department of Home E nomics, and the erection of its new building, which w equipped, in large measure, by Summer Session funds, ma possible an unusually varied group of courses in this field.

In the last resort the Summer Session is what the facul makes it. Serious attention should, therefore, be paid to incre ing the present meagre salaries given instructors. Our tuiti fee is lower than that of the first-class Eastern institutions. Harvard the student pays $20 a course, or $60 for the thr courses which are the rule with us; at Columbia he pays $41 f six units; at Pennsylvania, a tuition fee of $45; at Michigan, tuition fee of $20; at Wisconsin, a tuition fee of $15, which is be increased to $30 in 1918. Only at Harvard and Columbia the Summer Session self-supporting. The deficits are, at Pen sylvania, $1000; Wisconsin, $9000–$11,000; Michigan, $25,0 In the University of California the fee was increased from $ to $15 in 1908. In that year the enrollment, which had, f three years, been falling off, increased from 522 to 661. It highly desirable that our tuition fee should now be increas sufficiently to permit a substantial increase in salaries. Th are, at present, half, or little over half, those paid by the ins tutions named above. To men whose salaries in the regular s sions are $3000, Harvard pays $460; Columbia, $500; Penns vania, $450; Wisconsin, $400; Michigan, $500; California, $2 It is probable that higher salaries would attract to the Sumn Session members of our own faculty especially fitted to condu graduate courses. This would make for the increase of inter in such work, for the maintenance of standards, and for the c tinuation of research through several sessions.

At this point it is proper to emphasize the desirability of organization of intersession work for graduate students. 1916 such work was offered by the departments of Agricultu Anatomy, Chemistry, Mathematics, Palaeontology, and Zoolo Instruction was given without cost to the University. It is al

ther probable that such work could be financed if a tuition fee
re charged. It may seem wise to extend it to include courses
r undergraduates as well.

The Special Term of the 1917 Summer Session, May 21 to
ne 23, was an interesting experiment in intersession work.
e courses were designed to meet the needs of persons who de-
ed to train themselves, and to teach others, to render efficient
rvice to their country in the present emergency. The curricu-
m included courses in Community Welfare, Household Art and
ousehold Science, Telegraphy, Home Care of the Sick, and
irst Aid. Most of the instructors volunteered their services,
d the gratitude of the University is due them for their patri-
ic labors. Although plans had to be made hastily, and although
e list of courses was not published until shortly before the
ening of the term, there was an attendance of 524. Of these
were men and 495 were women. One hundred and ninety-six
ere University students; 74, teachers; 83, housewives; 12,
rses; and the remainder represented 32 other occupations.
erkeley was represented by 287, Oakland by 62, San Francisco
34, and the rest of California by 93 students. The remainder
me from 22 states and four foreign countries. While it is im-
robable that so large a number of persons could, under ordinary
nditions, find time during this period of the year for University
ork, the number of students and teachers, which could be con-
derably increased by earlier announcement of the programme,
sufficient to justify a repetition of the experiment in 1918.

Respectfully submitted,

WALTER MORRIS HART,
Dean.

WILMERDING SCHOOL

SAN FRANCISCO, July 1, 1917.

To the President of the University,

SIR: The work of the Wilmerding School, being limited b the income of a fixed endowment, a year's progress is not to measured by increased enrollment or other evidence of materi growth. The province of an endowed school of this character on the frontier of educational exploration, and its success is d termined by the extent to which it has advanced in the directi of its endeavor, and by the degree to which it has exploited th field occupied by it.

During the past year the Wilmerding School has gone with its established work, as set forth in previous reports, wi good results. In June, 1916, the first class to be graduat under our plan of co-operation with the Lick School, includ 69 boys, who received diplomas jointly in the names of bo schools. The enrollment during 1916–17 has been 485 boys, whom 67 were graduated June 1, 1917.

Aside from our regular work, during the past three years have experimented with several groups of retarded boys from grammar school in our neighborhood, for the purpose of testi their capacity for certain kinds of mechanical work not usual found in schools and the possibility of correlating such wo with the classroom instruction in grades as low as the fifth a sixth grades of the elementary school. Some of these bo although fifteen years of age, had reached only the third a fourth grades. The alertness and eagerness of these boys their shopwork, the reports of improved progress in their gra- mar school studies, and the fact that several of them have start t learn trades for which they developed an aptitude while here, ke us desire to continue the experiment on a more extensive ale and in a more thorough manner, whenever the necessary eans may be available.

During recent years educators and others have been much ncerned with the fact that large numbers of boys drop out of e grades at various stages prior to graduation. The principal use is retardation; the boy who drops out is the one who has adually slipped behind, and once out of step is neglected by s teacher, becomes discouraged, and finally quits. These are e boys from whom the army of American mechanics is largely cruited. They are ones for whom vocational schools might ll be provided and into which they should be placed whenever ey have become definitely out of step in the formal studies of e elementary school. Of all school children, they need the ost attention, and usually get the least. They are too young learn trades, but most of them are clearly destined to become orkmen—either skilled mechanics or common laborers—and ould be handled accordingly. Possibly the trade school problem, which Mr. Wilmerding had in mind, is partly the problem the retarded boy, and we hope that this interesting experient that we are conducting may contribute something toward e solution of both problems.

Respectfully submitted,

Geo. A. Merrill,
Director.

DEAN OF WOMEN

Berkeley, July 1, 1917.

To the President of the University,

Sir: I have the honor to present the following report of th work of the office of the Dean of Women for the year 1916–1

With the opening of each college year, this office attempt afresh to make the University less remote and impersonal to th new women students. For six years, the Senior and Graduat Advisory Committees have been improving and developing thei work. In August, 1916, these student committees were suppl mented by a group of the wives of members of the faculty, wh offered hospitality in their own homes to the new students wit their Senior advisors and who have through the year kept i touch with individuals thus introduced. In many cases th opportunity to meet and know an older woman has been deepl appreciated.

One of the constant duties of this office is the housing of th women students. Conditions in general have improved. Du ing the last year 404 visits of inspection have been mad Eighty-seven houses have been approved, of which 34 accomm date less than five, 40 accommodate from five to 15, and accommodate 15 and over. Four hundred and eighty-eig women were living in approved houses August to Decembe 1916, and 413 were living in approved houses January to Ma 1917.

The houses fall into three groups: (1) Boarding and lodgi houses; (2) houses for individual or small group housekeepin and (3) lodging houses. For the past year the groups were follows:

Boarding and lodging	40
Lodging	29
Housekeeping	11
Lodging with or without housekeeping equipment	7
Approved houses	87

Seventy of the houses are within a radius of five blocks from ie Campus. Since 1912, the prices have increased approxiately $5 a month for room and board and $2.50 a month for dging and housekeeping. It is probable that there will be an icrease in prices in August, 1917.

The heads of the larger approved houses have formed an rganization, which by agreeing to make uniform arrangements ith students (uniform as to method, not as to price), and enuraging student government in the different houses, will go ar to establish good feeling between students and boarding ouse keepers and greater responsibility for conduct among the udents themselves. Student government leagues are now stablished in many of the houses and the desire to create such agues in all the houses is growing.

I have already hinted the probability that prices for room nd board will be increased with the opening of the college year. his emphasizes the perennial question—what are the expenses or a year at college over and above the published registration, nfirmary, gymnasium, and laboratory fees?—a question capable f an endless variety of answers, all more or less accurate.

The facts are elusive, both because of reticence on the part f students, and a prevailing distaste for the keeping of accounts. s a result of a simple questionnaire sent out from this office, e have obtained some figures, admittedly not comprehensive or eliable from the point of view of the statistician, but useful as a uide and an indication of the great diversity of means among he women of the University. Classified by expenditure, there re, roughly, six groups of students: those living at (1) sorority ouses; (2) clubs; (3) boarding houses; (4) their own homes the majority of these students are under no expense for room nd board); (5) those who are housekeeping; (6) those who are self-supporting. (The majority in this group give three hour a day at housework in private families in return for room an board, therefore no item appears for either room or board.) Th average expense of the individual in each group per month fo board and room, laundry, carfare, books, and college supplie dues and assessments, upkeep of clothing, is as follows:

Sorority	$55.00
Club	40.57
Boarding house	53.32
At home	19.41
Housekeeping	30.26
Self-supporting	10.22

The average monthly cost of an outfit of clothing for a yea is not included. The following table is an attempt to show th variation of the expense per month for room and board in eac group for which such figures can be presented:

Board and room	Sorority	Club	Boarding house	Housekeeping
Varying from	$25–35	$21–$35	$30–40	$12.35–$24.5
$10.00–$20.00				93%
$20.00–$30.00	2%	77%		7%
$30.00–$35.00	48%		65%	
At $35.00	50%	23%		
$35.00–$40.00			35%	

The women of the University have reflected the eagerne of women in every community to demonstrate their will an ability to serve their country. Women of the faculty ha allied themselves with National or State organizations whe their special training is of use. At the request of the Dean the Faculties, a report has already been rendered of the activities.

The Associated Women Students have made a beginning sin January, 1917, in war relief work.

(1) $50 was appropriated for the purchase of materials f the Red Cross box, number 8. The undergraduate women di all the hand work on the articles required for the box, workin every Tuesday and Thursday afternoon from 4 until 6 o'cloc

(2) 400 members were secured for the Berkeley Chapter of the American Red Cross, through the A. W. S. Red Cross membership campaign.

(3) $50 was contributed by the A. W. S. to the University of California Ambulance Unit.

(4) A war service committee registered the women of the University for such work as each would be equipped and willing o do in case of necessity.

(5) The Prytanean Society contributed $300 to the Berkeley Chapter of the American Red Cross and $50 to the University of California Ambulance Corps.

(6) The A. W. S. Counter contributed $145 to the Berkeley Chapter of the American Red Cross and $100 to the University of California Ambulance Corps.

Plans are now being completed to continue and enlarge this work.

In general the work of this office has proceeded through the year along the usual lines of academic, administrative, social, and personal activity. The steady growth of the student body makes it necessary to reach further each year. Each year a greater number of competent student leaders must be developed. Good ground for an optimistic view of student government is revealed in the excellent material constantly emerging to meet this need. There is a growing demand for boarding places, for employment for the self-supporting student, for scholarships and loans, for personal advice and guidance. Our office has endeavored to expand proportionately and has been materially assisted in this by increased office space.

The report made a year ago by this office on the various opportunities offered women at the University for training for profitable employment has proved of value to the individual student seeking some concrete basis for choice in her college work. It has also been called for by other colleges, bureaus of occupation and students of vocational guidance. Through the co-operation of the different departments the report has been kept up to date.

Out of the confusion of opportunities and duties which can be suggested for this office for the coming year, but which can not be clearly foreseen, one duty is fairly obvious: to heed the call for the work of women and to direct training along the lines which are most serviceable to the country. By co-operation with such State organizations as the Council of Defense, and the League for Women's Service, it will be possible to register University women according to their training and ability, and to keep in touch with the requirements of employers, in business, in industry and in the professions. Further than this, we shall pursue our usual tasks and we shall attempt to meet new opportunities as they may arise.

Respectfully submitted,

LUCY WARD STEBBINS,
Dean.

CALIFORNIA MUSEUM OF VERTEBRATE ZOOLOGY[*]

BERKELEY, July 1, 1917.

o the President of the University,

SIR: It might be expected that the unsettled economic and nancial conditions would affect adversely an institution which, ke the California Museum of Vertebrate Zoology, is dependent r its maintenance upon private benefaction. Therefore it is a arked satisfaction to report that through the unswerving interst of the founder, Miss Annie M. Alexander, our income has not ly been sustained but augmented to an extent which more than akes up for the present increased cost of maintenance. As a sult, the activities of the Museum have gone on under circumances wholly favorable.

During the past year there have been 177 formal accessions of aterial, and these have comprised 3279 specimens, catalogued nd installed. As is shown by the list of gifts beginning on age 182 of this report, specimens were received by donation rom seventy-three different individuals or institutions. This urce of accession often provides material of particular need nd which could scarcely be afforded by special expedition because f the disproportionate cost. The department catalogues now ow the following totals: Mammals, 25,387; birds, 27,692; reples and amphibians, 6284; sets of birds' eggs, 1717.

The rate of growth of the Museum as a repository of scienific specimens in its special field is indicated by the following gures. On June 30, 1908, the year of its inauguration, the total umber of catalogued specimens was 1065; on the corresponding date in 1909, 16,075; in 1910, 24,704; in 1911, 35,681; in 1912, 42,947; in 1913, 48,872; in 1914, 52,134; in 1915, 54,555; in 1916, 57,801; and in 1917, 61,080.

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[*] A list of gifts presented to the Museum of Vertebrate Zoology will e found on pages 182–186.

Fifty separate loans of scientific material were made during the year. These loans went to thirty-six different individuals or institutions and comprised a total of 710 specimens.

The titles of the papers published during the year may b learned from the bibliographies of our staff members appearing elsewhere in this report. The following pieces of research work have been completed, though for the most part not yet published The manuscript for the book on the game birds of California, by Drs. Grinnell and Bryant and Mr. Storer, to be published by th University of California in its Semicentennial Series, is now i press. In this book each of the 107 species of birds meritin consideration as game is treated as fully as available informatio permits. Most especially is the economic phase of the subje given analysis, and the book thus provides an inventory of a considerable natural asset at a time when all the potential resourc of the country are being carefully estimated. Throughout th book emphasis is laid upon the tenet that our wild bird lif should be so treated that it may permanently serve in a max mum degree to hold in check insect and rodent pests, to provid food for man, and to supply an incentive to human recreatio

Mr. Dixon has completed a paper giving the best know methods for combating the pocket-gopher in California. Of a our vertebrate animals this rodent is, next to the ground squirre undoubtedly the cause of the most serious injury to the agricu tural industries of this State. Mr. Dixon's recommendations f the destruction of gophers are based on extended personal e perience while ranching, and involve many new points.

Several papers on the distribution and systematic status the amphibians and reptiles of California have been complete These have resulted from the studies by Mr. Charles L. Can and Dr. Grinnell, based on the Museum's collections of mo than 6000 specimens in this department.

Mr. Swarth is continuing his revisionary studies upon certa bird groups, many of which are still somewhat in confusion sy matically. He has this year finished papers on the marsh ens of California, upon the jays of the genus *Aphelocoma,* d upon the sapsucker, *Sphyrapicus thyroideus.* A discovery a surprising nature is that of the existence in California in nter of a giant race of the white-fronted goose. Through the orts principally of Judge F. W. Henshaw, the Museum has me into possession of an excellent series of this new goose, and on this series Mr. Swarth and Dr. Bryant have based a paper tting forth the facts in the case.

A paper from the pen of Dr. Bryant deals at length with the bits and food of the roadrunner in California. Mr. Holden is thor of a paper on the osteological relationships of three west-n species of beaver. Dr. Grinnell has put out several papers aling with the general subject of geographical distribution of rtebrate animals in California. Mr. Storer and Dr. Grinnell e continuing work on their report upon the natural history of e Yosemite National Park.

The research work of the Museum has thus covered "pure" es of inquiry, as well as lines obviously of "applied" value.

In the late summer and fall of 1916, field work was prosecuted Messrs. Swarth and Dixon in the southern Sierra Nevada in resno County, where a faunal section was run up the western ope from the vicinity of Sanger to Kearsarge Pass. Much new stributional data was obtained. In March, 1917, field work as begun by Dr. Grinnell and Mr. Dixon in the Inyo region, ntering in Death Valley, where tempting problems in verte-ate distribution await solution, and where the natural animal sources need to be investigated. This work in the Inyo region now well under way.

One staff member, Dr. Bryant, in connection with his duties nder the California Fish and Game Commission, has devoted large share of his time to educational work. Many lectures ave been given throughout the State dealing with economic rnithology and mammalogy; and courses have been conducted the University Extension Department, on the vertebrate nat-ral history of California. In the latter connection, field trips ave proven a particularly successful feature. These lectures and courses of instruction were largely attended, evidencing keen popular interest in the subjects treated.

Another line of the Museum's activity which has absorbed an increased amount of time the past year, lies in the direction of furnishing information to correspondents, answering letters of inquiry on such subjects as methods of destroying harmful mammals and birds and of encouraging beneficial species, and identification of specimens.

Thus have we tried to carry out the program in consonance with the principles heretofore set down as governing the Museum's policy.

Respectfully submitted,

J. GRINNELL,
Director.

GIFTS TO THE UNIVERSITY*

GENERAL LIST

Acme Wire Company of New Haven, Conn., an exhibit of its products for the Department of Electrical Engineering.

Aero Club of America, three medals of merit for award to the three students in the University who should write by March 15, 1917, the best essays on military aeronautics, the mechanics of the aeroplane, and possible technical developments in aeronautics, and possible application of air craft for utilitarian purposes. The Aero Club of America has expressed the hope of making this an annual contest.

Alexander, Miss Annie M., maintenance for the California Museum of Vertebrate Zoology, for the year 1917, on the basis of an annual gift of $12,750 for field work, salaries, and current museum expenses.

Alumnus, An, $5000 as an addition to the fund for the equipment of the new University Hospital.

American Association for the Advancement of Science, $500 for investigations by Dr. Takeoka and members of the faculty of the Department of Pathology, etc., in regard to the use of taurin in the treatment of tuberculosis.

Argentine Republic, valuable specimens from its exhibit at the Panama-Pacific International Exposition, for the use of the Departments of Vertebrate Zoology and Agriculture.

Austin, '86, Stafford W., $200 as an addition to the Class of '86 Loan Fund.

Bell, A. F., of the Associated Oil Company, four photographs of the Painted Rock on the Carriso Plains in San Luis Obispo County.

Blanding, Gordon, a subscription of $1000 toward the fund for continuing the D. O. Mills Expedition from the Lick Observatory to the Southern Hemisphere.

Boalt, Elizabeth Josselyn, a trust fund of approximately $200,000 as endowment for the Elizabeth Josselyn Boalt Professorship or Professorships in the School of Jurisprudence.

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* Compiled by the Secretary of the Regents from the official records.

Bourn, W. B., a subscription of $1000 toward the fund for continuing the D. O. Mills Expedition from the Lick Observatory to the Southern Hemisphere.

Bradley, '86, F. W., $5000 as an addition to the fund for the equipment of the new University Hospital.

$1000 as his annual contribution toward the Mining Students' Loan Fund, now of a total of $4198.93.

A subscription of $1000 per annum for five years toward the fund for continuing the D. O. Mills Expedition from the Lick Observatory to the Southern Hemisphere.

$250 to aid the scientific researches of the Department of Biochemistry.

California Cap Company of Oakland, 500 No. 6 blasting caps, 500 electric detonators, 500 delay action exploders, a safety electric firing switch, and a case containing exhibits illustrating the manufacture of caps, exploders, and fuses.

California State Dental Association, $300 as a yearly grant for co-operation in research work with the Dental Department.

Carnegie Foundation for the Advancement of Science, $20,436 for pensions for members of the Faculty of the University of California or the widows of members of the Faculty, for the year ending June 30, 1917.

Cebrian, J. C., 1280 additional volumes of Spanish books, including about 170 volumes on history, 140 on law, 100 on medicine, 160 on various scientific subjects, 100 volumes of the Sixteenth, Seventeenth, and Eighteenth Centuries, printed in nineteen different Spanish cities, and some in their original bindings, including first editions of a number of valuable works; and facsimiles of old manuscripts, including "The Books of Astronomy of King Alfonso the Wise," of the Thirteenth Century, in five folio volumes; also 170 volumes of Spanish books, one-fifth scientific works, and nearly all published within the last three years, as an addition to his former gift of Spanish books.

Chemistry, Staff for the Department of, a gift to the University of patent rights to all inventions and discoveries which may result from the work during the summer of the thirty members of the department who are engaged in the endeavor to solve war problems presented by the National Government and the California State Council of Defense. Full particulars of this generous offer are given on page 268.

Chi Omega Fraternity, $25 as a prize to be won by the Senior completing with the greatest distinction, in the Junior year, twelve units in major courses concerned with the problems of social economics.

Class of 1910, An Alumnus of, $250 for a scholarship. (This donor was the holder of a State of California Scholarship and of a Levi Strauss Scholarship, and now repays the scholarship moneys so received.)

Claypole Memorial Research Fund in Pathology, the founder of, $8000, in liquidation of a note for $8000 dated April 6, 1915, and due on or before April 6, 1935, given as part of the endowment for the fund.

Coast Manufacturing and Supply Company of Livermore, 200 feet of "Dreadnaught" fuse and 100 feet each of "Eclipse," "Comet," and "Victor" fuse, and waterproofing material and a display case showing the construction of different brands of fuse.

Crane Company of Chicago and San Francisco, a cabinet containing sample bars of cast iron, malleable iron, ferro-steel, and cast steel, used by the company in the manufacture of their valves and pipe-fittings, together with tubes containing the exact proportions of each of the ingredients to be found in each of the materials.

Crocker, Mrs. William H., a subscription of $1000 per annum for five years toward the fund for continuing the D. O. Mills Expedition from the Lick Observatory to the Southern Hemisphere.

Crocker, Regent William H., underwriting, in association with Regent James K. Moffitt, of an agreement that if the University would advance $50,000 for completing the equipment of the University Hospital that the signers of this agreement would, within six months, obtain this $50,000 in gifts and subscriptions from various donors, or else themselves make up the difference.

A subscription of $1000 per annum for five years toward the fund for continuing the D. O. Mills Expedition from the Lick Observatory to the Southern Hemisphere.

Davis, Dr. Horace, President of the University of California from 1888 to 1890, a bequest of $10,000, the income to be used for the purchase of books for the University of California Library.

Davis, William R., a bequest of $6000 as endowment for a scholarship, subject to the following provisions, as reported to the Regents September 12, 1916:

"I give to the University of California the sum of Six Thousand Dollars as a perpetual scholarship fund to be invested or deposited as its Board of Regents shall from time to time deem best, the income from which shall be awarded and set apart from time to time, in succession, by the Board of Regents, not as a fellowship benefit but as a scholarship benefit to aid such deserving student of the University of California in good standing as the Board shall designate and find in need of such benefit.

"Should the Board at any time find that the student so designated has withdrawn or been suspended or expelled from the University, or

> is no longer in need of such aid, or has died or become idle, indifferent, dissipated, or dissolute or from any cause unworthy in the judgment of said Board of further receiving the benefit theretofore awarded to him or her, then and in any such event, the award and allowance of benefit of such scholarship shall be revoked and terminated by the Board of Regents, and thereupon such income shall again be awarded and allowed as in the first instance. No aid hereunder shall be had or received by any student after he or she shall have received or been awarded a degree of the University of California, nor by any one student for a period longer than four years in the aggregate. I do not make this amount larger, knowing that the income therefrom will be sufficient help for the character of student I have in mind and wish to aid.''

Deister Concentrator Company, of Fort Wayne, Indiana, for the College of Mining, a Deister No. 3 Improved Slime Table and a Deister Overstrom Table for the treatment of slime and fine sands, with sets of instructions, test-sheets, etc., and with an offer to renew various parts of this machinery from time to time, to keep these tables abreast of the progress of invention.

Fish, Pierre A., Professor of Veterinary Comparative Physiology and Pharmacology in Cornell University, $10 as an addition to the principal of the Edith J. Claypole Memorial Research Fund in Pathology.

Forner, C. K., a concrete sundial pedestal, a garden seat, and three garden vases, for the use of students in landscape gardening.

Furrey, Wilmer Ethelston, a bequest of his estate, after bequeathing his real property on Blaine Street, Santa Cruz, California, to Minnie B. Young of Los Angeles, the University's inheritance being reported as consisting of approximately $1300 in cash and real estate valued at approximately $2000. Mr. Furrey's will contained the following clauses:

> ''I give and devise to my friend, Minnie B. Young, of Los Angeles, California, the whole of my real property situate upon Blaine Street, Santa Cruz, California, together with all personal property thereon. This I do in recognition of her past kindness to me.
>
> ''I give, devise and bequeath to The Regents of the University of California the entire residue of my estate to be by them used for the benefit of the University of California in such manner as they may deem may do most good.
>
> ''If for any reason this devise and bequest shall by a Court of competent jurisdiction be adjudged to be void, in whole or in part, then such part shall be considered as herein and hereby given, devised and bequeathed to my said friend, Minnie B. Young.''

Hearst, Regent Phoebe Apperson, $2400 for the support of the Hearst Scholarships for 1916–17.

$1680 toward the maintenance of the Museum of Anthropology.

$1423.28 toward the equipment of the Hearst Memorial Mining Building. This brings her gifts for that purpose to a total of $55,000, in addition to her gift of $645,000 for the building itself.

$1000 as a contribution toward the salary for 1916–17 of Professor John Galen Howard as Supervising Architect.

$508.85 for additional cases for the display of exhibits at the Museum of Anthropology.

The E. L. McLeod Collection of baskets, including 230 specimens, chiefly from California, but with a liberal representation from Alaska, British Columbia, Arizona, and New Mexico, the baskets from the Shoshonean tribes from the vicinity of Kern River, California, being of particular value and interest.

A series of pottery spindle whorls from the Valley of Mexico, deposited in the Anthropological Museum.

Seventy pieces of painted and lacquered gourd bowls, vases, and receptacles from Mexico.

Hendy Iron Works of San Francisco, Joshua, latest type of Matteson ore-car, with a capacity of sixteen cubic feet, for the use of the mining students in the Lawson Adit.

Hercules Powder Company, 1000 pounds of dynamite, to be used by the mining students in driving the Lawson Adit into the Berkeley hills.

Hurst, George L., an electrically-driven working model of a five-cubic-foot Risdon Gold Dredge, complete in all details and accurately built, at a cost of $750, to a scale of a half-inch to the foot.

Kiang Kanghu, S. C., Assistant in Chinese, a library of some ten thousand Chinese books, many of them exceedingly rare. Mr. Kiang has made this gift with a view to furthering the study of Oriental languages and literature and making the western world acquainted with the treasures of Chinese civilization.

Marsden, Mrs. W. L., of Seneca, Oregon, extensive texts, grammatical notes, and vocabulary of the Northern Paiute language, recorded by her late husband, Dr. W. L. Marsden, and now to be edited by Professor A. L. Kroeber of the Department of Anthropology.

McVicker, Emma J., a bequest of $1000 as the ''McVicker Loan Fund,'' to be used as loans to women students who are working their way through the University, without interest, but to be repaid when they obtain positions and earn salaries after graduation.

A bequest of an oil painting of Salisbury Cathedral, after Constable, and three etchings by Peter Moran, Poole, and an unknown English etcher.

Merrill, '91, Charles W., $100 to aid the scientific researches of the Department of Biochemistry.

Miller, Dr. Harry East, $250 to aid the scientific researches of the Department of Biochemistry.

Mills, Ogden, a subscription of $1000 per annum for five years toward the fund for continuing the D. O. Mills Expedition from the Lick Observatory to the Southern Hemisphere.

Moffitt, Mrs. James, a subscription of $10,000 toward the fund for the equipment of the new University Hospital.

Moffitt, '86, Regent James K., underwriting, in association with Regent William H. Crocker, of an agreement that if the University would advance $50,000 for completing the equipment of the University Hospital that the signers of this agreement would, within six months, obtain this $50,000 in gifts and subscriptions from various donors, or else themselves make up the difference.

$100 to aid the scientific researches of the Department of Biochemistry.

Moody, Dr. Mary B., for the Department of Zoology, a mounted pelican.

Morrison, '78, Mrs. A. F., $1500 for the purchase of an ophthalmological library of 486 volumes for the Medical School.

Napa Seminary Club Loan Fund, $100 as an addition to their loan fund endowment.

Native Sons of the Golden West, Quartz Parlor of Grass Valley, maintenance for 1916–17 of a scholarship in the College of Dentistry.

Nutting, Franklin P., '00, $50 for books for the College of Commerce.

Phelan, Senator James D., $1500 to print and publish the papers of the San Francisco Vigilance Committee of 1851, as edited by Miss Mary Floyd Williams in the preparation of a thesis on the early legal history of California.

Phelps, Mrs. Timothy Guy, a bequest of $35,000, this money "to be invested and the income therefrom to be used in the purchase of books for a scientific library to be established at the Lick Observatory, to be known as the Timothy Guy Phelps Memorial Library." This gift is in memory of the long services of Regent Phelps as Chairman of the Lick Observatory Committee of the Regents.

Prudential Insurance Company of America, twenty-three charts on insurance and mortality, for the Department of Economics.

Prytanean Society, $50 as a donation to the Infirmary.

Robertson, T. Brailsford, Professor of Biochemistry, a conveyance to the Regents of all his rights to the substance known as tethelin, discovered by himself and now covered by United States and British patents, and to the use of the trade name tethelin, likewise covered by United States trademark and British registration. This substance, isolated by Professor Robertson in the pituitary body, has been found to have remarkable qualities in connection with the regulation of growth, and particular value in promoting the growth of tissue in case of wounds. Professor Robertson gives his rights to the Regents upon the trust that the Regents shall use any proceeds derived from the manufacture and sale of tethelin, or from any disposal of the rights thereto, to reimburse the Regents for any expense to which they may be put in connection with this matter, to reimburse Professor Robertson to the amount of $1000 for expenses to which he himself has been put in the matter, and to the maintenance of research work in the physiology, chemistry, and pathology of growth, and if the proceeds are sufficient to justify it, to the establishment and maintenance of an institute of research, and in case of the disablement of Professor Robertson, to the payment to him of a pension of $5000 per annum, and upon his death, to the payment to his wife, should she survive him, and in case of the death of both Professor and Mrs. Robertson, to his children, should any survive him, throughout their minority, of a pension of like amount.

San Francisco Architectural Club, a free membership for one year from graduation to the student graduating with highest honors from the School of Architecture.

Sloss, Mr. Leon, some forty framed water-color paintings, made in 1878, on and about the Pribiloff Islands, by Elliott, the seal expert. The subjects are zoological, anthropological, or geographical, and the paintings possess distinct historical interest.

Spreckels, A. B., a subscription of $1000 per annum for five years toward the fund for continuing the D. O. Mills Expedition from the Lick Observatory to the Southern Hemisphere.

Sullivan Machinery Company, for the College of Mining, a Sullivan Hammer Drill (Class DP–33, with pneumatic feed), valued at $200.

Swedish-American Patriotic League of California, Inc., $125 as its yearly gift toward the maintenance (for 1916–17) of a scholarship for a Swedish-American student.

Towne, Arthur G., $377.11, in addition to his original subscription of $2000, toward the construction and equipment of the new University Hospital.

Walcott, '07, Dr. A. M., of Port Velho, Brazil, $300 as a loan fund to aid needy medical students.

Western Electric Company, a demonstration panel, given to the Department of Electrical Engineering, to illustrate modern practice in telephone engineering.

Williams, Mrs. Dora, a bequest of a painting, ''Mountain Home on Mount St. Helena,'' by Virgil Williams.

Xi Psi Phi Fraternity of the Dental Department, Alumni of, $150 as a loan fund for dental students.

DEPARTMENTAL LIST

GIFTS TO THE PRIZE FUND OF THE STATE DAIRY COW COMPETITION

Mrs. Anita M. Baldwin, Santa Anita, $500.

Sacramento Clearing House, Sacramento, $300.

J. S. Gibson Company, Williams; F. M. Helm, Fresno; and A. W. Morris & Sons Corporation, Woodland, $250 each.

W. H. Dupee, Santee; G. W. Wilder, Colton, $200 each.

Balfour, Guthrie & Company, San Francisco; Somers & Company, San Francisco; California Central Creameries, San Francisco; Larrowe Milling Company, Los Angeles, Millbrae Dairy, Millbrae; F. Stenzel, San Lorenzo; Alexander & Kellogg, Suisun; Sperry Flour Mills, Stockton; State Holstein Breeders' Association, Chino; State Jersey Breeders' Association, Stockton; De Laval Separator Company, New York City; and Palo Alto Stock Farm, Palo Alto, $100 each.

Western Creameries Company, San Francisco, $50.

Miss M. M. Holdridge, Modesto; ''Calf-Way'' Milker Company, San Francisco; and B. E. Nixon, Yountville, $25 each.

Pacific Dairy Review, San Francisco, $5.

Donors of Special Prizes in Money, or Dairy Bulls, or Calves, or Appliances

Country Life Department of the Sacramento Bee, Sacramento, $450.

Pacific Rural Press, San Francisco, $400.

California Cultivator, Los Angeles, $300.

Livestock and Dairy Journal, Sacramento, $250.

McAlister & Sons, Chino, $110.

Modesto Creamery, Modesto, $100.

Barber & Thomson, Los Angeles, $40.

American Guernsey Cattle Club, Peterboro, New Hampshire; American Jersey Cattle Club, New York City; and Holstein Friesian Association of America, Brattleboro, Vermont, two silver trophies each.

Scott, Magner & Miller, San Francisco, one silver trophy.

N. B. Locke Company, Lockeford; C. G. McFarland, Tulare; J. W. Coppini, Ferndale; J. W. Clise, Seattle; E. B. McFarland, San Mateo; K. W. Abbott, Milpitas; Dr. J. W. Henderson, Berkeley; A. B. Humphrey, Mayhews; and N. H. Saylor, San Francisco, one pure-bred bull calf each.

Larrowe Milling Company, San Francisco, one carload Larrowe's dried beet pulp.

ssociated Manufacturers Company, Waterloo, Iowa; Baker & Hamilton, San Francisco; Beck Hardware Company, San Francisco; De Laval Dairy Supply Company, San Francisco; Empire Cream Separator Company, Bloomfield, New Jersey; International Harvester Company, San Francisco, one cream separator each.

Calf-Way'' Milker Company, San Francisco, and Sharples Separator Company, San Francisco, one two-unit milker outfit each.

GIFTS TO THE HERBARIUM, BOTANICAL MUSEUM, AND BOTANICAL GARDEN

To the Herbarium

nundsen, E. O., East Auburn, 1 sheet *Euphorbia hypericifolia.*

onymous, 326 sheets of Argentine plants purchased of Sr. Pedro Jorgensen, Andalgala, Argentina, and presented to the Herbarium by a friend.

bcock, Professor E. B., University of California, 1 sheet of *Quercus suber* from tree planted by Professor Hilgard.

ergesen, Dr. F., Botaniska Have, Copenhagen, Denmark, 2 sheets of marine algae.

ncquet, Dr., Berkeley, 1 sheet of *Argona* from Argentina.

andegee, Mr. and Mrs. T. S., University of California, 150 sheets of plants, mostly from Santa Catalina Island; also 198 sheets of plants collected in Arizona. (See also under Dr. C. A. Purpus.)

andt, Dr. R. P., Gualala, 2 specimens of *Hemizonia corymbosa.*

aunton, Ernest, Los Angeles, 12 sheets of *Eucalyptus alba* and 1 grass, *Elensine indica.*

rlew, Fred E., Los Angeles, 1 specimen of *Crepis nana* from Mt. San Antonio.

andler, H. P., '02, Redlands, 10 specimens of *Lupinus* from southern California.

ndit, Professor I. J., University of California, 464 mounted sheets and 235 unmounted sheets for herbarium use and for duplicates.

wford, Professor D. L., Pomona College, Claremont, 9 sheets plants from southern California.

vidson, Dr. A., Los Angeles, 6 sheets of phaenogams.

ig, F. M., '17, Berkeley, 1 sheet *Trichostema ovatum* from oil fields north of Bakersfield.

bes, C. N., Bernia Pauahi Bishop Museum, 3 sheets of Hawaiian plants.

es, Dr. R. Reginald, University of London, 14 sheets of *Oenothera* from garden cultures, including the type of *Oenothera novae-scotiae.*

nt, Mrs. Adele Lewis, Columbia, 38 sheets of *Ranunculus hystriculus* for the University sets, and 3 sheets of ferns.

l, Professor H. M., University of California, 313 sheets Californian plants, mostly from Nevada County.

Himebaugh, H. H., San Diego, 1 sheet *Solanum giganteum.*

Jepson, Professor W. L., University of California, 5 sheets miscellane plants from collections of Greene and Palmer.

Jones, Miss K. D., University of California, 1 sheet *Vitis antarctica.*

Jones, Wyatt W., Salt Lake City, Utah, 42 sheets of Utah plants.

Kennedy, Professor P. B., University of California, 1 sheet of *Azolla.*

Koch, Fred W., Lowell High School, San Francisco, 1 sheet *Anemo Drummondii.*

Macbride, J. F., Harvard University, 1 sheet *Oreocarya nubigena* fr Idaho.

Meinecke, Dr. E. P., U. S. Forest Service, San Francisco, 1 specimen grape-fern from the Yosemite.

Merriam, Dr. C. Hart, and Bailey, Mr. Vernon, 5 sheets of Compositae fro the North Coast Ranges.

Moxley, George L., Los Angeles, 1 sheet of *Festuca Grayi.*

Nelson, J. C., Salem, Oregon, 1 sheet *Lasthenia glaberrima* from Salem.

Parish, S. B., San Bernardino, 44 sheets of phaenogams for the herbariu 104 sheets of phaenogams for the University sets, and 2 sheets cryptogams.

Pendleton, Dr. R. L., '14, Berkeley, an herbarium of Californian plan consisting of 2682 sheets of phaenogams and 196 sheets of pteridophyte

Peters, Wm. R., Fallbrook, 2 sheets of *Chamaebatia australis.*

Prosser, J. R., Oakland, a collection of 273 mounted specimens of Nebrask plants.

Purpus, Dr. C. A., University of California, 265 sheets of Mexican plant

Reed, Fred M., Riverside, 2 sheets *Eucalyptus.*

Reed, Miss R. R., '13, San Luis Obispo, 5 sheets of *Perezia microcephala.*

Reed, Mrs. R. S., San Luis Obispo, specimens of *Hemizonia* and *Cuscuta.*

Rosenbaum, Lewis S., '17, 2 sheets of composites from San Mateo Count

Sessions, Miss K. O., '81, San Diego, 2 sheets of economic plants.

Setchell, Professor W. A., University of California, 15 sheets of *Nicotian* and 27 sheets of mosses and fungi.

Smith, Mrs. James B., Burlingame, 2 sheets of ornamental plants.

Smith, L. S., Berkeley, 1 sheet of *Carex* from the Lake Tahoe region.

Swarth, Harry S., University of California, 3 specimens from Fresno Count

Tracy, J. P., '03, Eureka, 83 sheets of plants, including 55 cryptogam and 28 monocotyledons and composites.

Walker, Miss H. A., University of California, 150 sheets of plants, mostl for exchange purposes, including 60 sheets of *Hemizonia plumosa* an 40 sheets of *Roubieva multifida.*

Warren, D. L., Boonville, 3 sheets of *Erythronium* and *Calypso.*

Welty, E. E., Ripon, 3 sheets of *Hemizonia hispida.*

Yates, Dr. H. S., Bureau of Science, Manila, P. I., 50 sheets of ferns and fern allies.

Total number of specimens received by gift from July 1, 1916, to June 30, 1917, for the Herbarium, 5767.)

To the Botanical Museum

nderson, Dr. F. M., Berkeley, a specimen of nuts from trees of South America.

ylward, Fred N., '16, Berkeley, 25 species *Polyporaceae* from Mendocino County.

abcock, Professor E. B., University of California, section of trunk of *Quercus suber,* a tree planted by Professor Hilgard.

radley, Professor C. B., University of California, a section of a large trunk of *Juniperus.*

raunton, Ernest, Los Angeles, 1 section of wood of *Eucalyptus alba.*

aulkner, E. O., 1 specimen *Volvaria speciosa* from Bakersfield.

ardner, Professor N. L., University of California, 2 specimens of fungi.

oodspeed, Professor T. H., University of California, seeds of *Fritillaria coccinea* from Dutch Flat.

all, Professor H. M., University of California, 3 specimens of fungi and 4 nuts of *Juglans Hindsii.*

ofen, W. C., Oakland, 1 specimen of *Lycoperdon sculptum* collected at Truckee.

orne, Professor Wm. J., University of California, 1 specimen of *Polyporus amarus* collected by Mr. Rodney Watkins in Plumas County.

pson, Professor W. L., University of California, specimens of abnormal nuts of *Juglans regia* collected by J. P. Tracy of Eureka, and transmitted by Professor E. B. Babcock; also 9 jars of teratological material in formalin and 1 specimen of bark of cork oak 1¾ inches thick from a tree 57 years old grown at Tuttletown.

ennedy, Professor B. P., University of California, 1 specimen of Irpex from Lake Merced.

e, Henry A., Washington, D. C., 1 specimen of Irpex collected at Berkeley.

uller, S., San Francisco, 1 specimen of mistletoe.

oll, Carl F., '16, Orange Grove, 1 specimen of snow plant from General Grant National Park.

ichols, M. B., Oakland, 300 specimens of fungi from North Berkeley.

att, R. H., Vacaville, 1 specimen of *Juglans Hindsii* cultivated in Vacaville.

roctor, Harriet E., Oakland, 1 package of fiber of *Asclepias mexicana* from Amador County.

ed, F. M., Riverside, 1 specimen of bark of *Eucalyptus rostrata.*

binson, Oscar, Colusa, 1 specimen of root and capsule of *Datura meteloidis.*

tchell, Professor W. A., University of California, 1 specimen of *Rhizopogon* and 1 of *Morchella,* both collected in Mariposa County, also 250 microscopical slides of botanical material for class use.

Swarth, Harry S., University of California, 5 cones and twig of foxtail pi

Tully, J. M., 1 specimen of *Agaricus crocodolinus* grown in San Francis

Valentien, A. R., San Diego, 1 specimen of *Echinocereus Engelmannii* fr the Colorado Desert.

Walsh, W. F., Berkeley, 12 specimens of *Lepiota rhaeliodes* from Fruitva

Whyte, Neil C., Walnut Creek, 13 specimens of moss and birch from Yuk Territory.

Wores, Miss Lucia, 22 specimens of fungi from Point Reyes Peninsula.

(Total number of specimens received by gift from July 1, 1916, to June 1917, for the Botanical Museum, 667.)

To the Botanical Garden

Aylward, Fred M., '16, Berkeley, rooted plants of 6 species of ferns fro near Fort Bragg.

Brandegee, Mr. and Mrs. T. S., University of California, 1 packet *Abutilon* seeds from Mexico.

Bradley, Professor C. B., University of California, seeds of 2 varieties climbing bean from Siam.

Goodspeed, Professor T. H., University of California, 3 sets of roots *Paeonia.*

Hall, Professor H. M., University of California, 13 packets of seeds *Compositae,* mostly from California.

Heller, Dr. A. A., Chico, 1 packet of seeds of *Hermizonia scarbella.*

Jardin Botanico, Buenos Aires, 1 packet seeds of *Quebracho colorado.*

Jepson, Professor W. L., University of California, rooted plant of *Den dromecon rigidum.*

Kidder, Mrs., Berkeley, seeds of *Amaranthus tricolor* from the Philippin Islands and cuttings of a rare *Eucalyptus.*

Kroeber, Professor A. L., University of California, 1 packet seeds of Zun tobacco.

McMurphy, Professor James, Stanford University, a collection of seeds *Hemizonia Lobbii.*

Miller, M. R., University of California, 1 packet Madole Tobacco seeds an 1 packet Yellow Prior Tobacco seeds.

Minthorn, Theodore, Los Angeles, 1 packet seeds of *Oxalis.*

Peters, Wm. R., Fallbrook, rooted seedlings of *Chamaebatia australis* from Palomar.

Purdy, Carl, Ukiah, 1 packet of seeds of a new *Hemizonia* from near the Terraces, Mendocino County.

Reed, Miss R. R., '13, San Luis Obispo, 15 bulbs of *Calochortus obispoensis.*

Royal Botanic Garden, Sibpur, India, 7 packets of seeds.

Swarth, H. S., University of California, 1 packet seeds of *Hemizonia Heermannii.*

racy, Jos. P., '03, Eureka, 4 packets seeds of *Compositae,* including new species of *Hemizonia.*

'alker, Miss Harriet A., University of California, 1 packet of seeds of *Arabis blepharophylla* from Sausalito.

Total number of specimens received by gift from July 1, 1916, to June 30, 1917, for the Botanical Garden, 65. Grand total of donations to the department between these dates, 6499.)

GIFTS TO THE DEPARTMENT OF CIVIL ENGINEERING

(November 1, 1916, to September 25, 1917)

merican Bridge Company (P. C. Newell), blue print plans of a bascule bridge.

acific Portland Cement Company, diamond drilling machine.

anta Cruz Portland Cement Co., ten sacks of cement.

. S. Steel Products Company, books and engineering periodicals.

GIFTS TO THE DEPARTMENT OF ZOOLOGY

rowne, Dr. E., Princeton, N. J., 5 *Bufo.*

runer, Dr. F. M., Ferndale, Cal., 1 embryo.

uytendyk, Dr., Batavia, Java, fish from Japan, 3 vials plankton from Indian Ocean.

alifornia Salt Works, Alvarado, Cal., 1 horseshoe crab.

ongdon, Mrs., Berkeley, 500 California shells.

riggs, W. G., Chloride, Ariz., Myriopoda from Cerbat Mountains.

lschner, Dr., Berkeley, 1 crab and 2 sponges from Fanning Islands, Pacific Ocean.

mery, F. W., Riverside, 1 specimen of *Anniella pulchra* Gray, from Temescal Canyon.

letcher, F. W. F., Nellakotta, India, 1 set antlers of Muntjac deer.

rates, Dr. F. E., San Francisco, 1 embryo.

ry, P., Insects from Florida.

ickey, J. P., San Francisco, 6 bottles trematode eggs.

acobsen, W. C., Berkeley, larval tapeworms from jack rabbit, from Winnemucca, Nev.; parasites from coyote; 34 coyote skulls, 17 cat skulls, and 12 badger skulls, from Winnemucca, Nev.

awamura, Dr. T., Kyoto University, Kyoto, Japan, named fresh water sponges from Japan.

ofoid, C. A., Berkeley, 4 *Diemyctyus torosus,* 1 *Batrachoseps attenuatus,* 1 *Plethodon oregonensis* from Saratoga, Cal.; 150 vials marine plankton from Pacific and Indian Oceans; 1 skin and skull of Muntjac deer from India; 1 head and antlers of Sambur deer from India; 2 skins of black monkey; 1 skull of black monkey; 1 skeleton of black monkey.

Lander, Miss Bessie, Exeter, Cal., 1 *Boa imperator* from bunch of banana

McClung, Professor C. E., Philadelphia, Pa., 12 slides of *Hesperotettix*.

McDonald, J. D., Pasadena, Cal., collection of marine Turbellarians fro San Pedro, Cal.

Maggia, Emil, Berkeley, 1 horned toad.

Martin, Dr. Wm. A., San Francisco, 1 specimen of *Testacella haliotide* and eggs.

Moody, Dr. M. B., Berkeley, 1 mounted pelican.

Peairs, C. A., Tulare, Cal., collection of small fish from artesian well.

Porter, Clarence, Berkeley, 1 *Gordius*.

Ritter, W. E., La Jolla, Cal., *Phrynosoma blainvilli*.

Robertson, W. R. B., University of Kansas, Lawrence, Kans., 2 vials *Paratettix* from Houston, Tex.

Scripps Institution for Biological Research, collection of *Sagitta bipunctata* and *Salpa*.

Spring Valley Water Company, San Francisco, 318 samples of fresh water plankton.

State Board of Health, Berkeley, 4 vials hookworm eggs.

Stephens, Frank, San Diego, 1 brain of *Spilogale*.

Stone, George, 1 bottle ecto-parasites from *Myotis;* 6 small slugs from Ventura; 1 Aristotle's Lantern of *Stronglyocentrotus franciscanus* from Moss Beach, Cal.; *Hyla regilla* from Piedmont, Cal.; 1 larva of *Polyphylla crinita*.

GIFTS TO THE CALIFORNIA MUSEUM OF VERTEBRATE ZOOLOGY

Note.—This list does not include specimens secured by collectors regularly employed from the fund provided by Miss Annie M. Alexander for maintenance of the Museum, nor does it include a number of accessions received by purchase out of the same fund.

The term ''mammal'' as here used ordinarily means a dry study-skin plus the cleaned skull belonging to the same individual, not infrequently a complete skeleton, and sometimes the entire animal preserved in alcohol. A ''bird'' is usually a dry study-skin, sometimes a partial or complete skeleton. A ''set of eggs'' is the total number of eggs found in a single bird's nest, often accompanied by the nest itself. A ''reptile'' or ''amphibian'' is the entire animal preserved in alcohol.

Localities are in California unless otherwise specified.

Agnew, J. B., 2 young albino gophers (*Thomomys b. pascalis*), from Visalia, Tulare County.

Alexander, Miss Annie M., 6 mink (*Mustela v. aestuarina*), 1 coon (*Procyon p. psora*), from Grizzly Island, Solano County; 4 river otters (*Lutra c. brevipilosus*), from Joyce Island, Solano County; 39 birds, from South America; 1 lizard (*Ablepharus b. poecilopleurus*), from Honolulu, H. T.

lexander, Miss Annie M., and Kellogg, Miss Louise, 35 mammals and 2 birds, from Cascada and Huntington Lake, Fresno County.

llen, Mrs. James T., 1 dwarf hermit thrush (*Hylocichla g. nanus*), and 1 Vigors wren (*Thryomanes b. spilurus*), from Berkeley.

rendt, W. M., 2 horned toads (*Phrynosoma platyrhinos*), from near Ryan, Inyo County.

tsatt, Miss S. R., 45 reptiles, from San Jacinto Mountains, Riverside County.

auer, C. F., 1 foreign bird.

illings, Dr. W. M., 1 foreign bird.

lake, Mrs. A. S., 1 goshawk (*Astur a. atricapillus*), from Berkeley.

lake, Mrs. E. T., 1 varied thrush (*Ixoreus n. naevius*), from Berkeley.

olt, E., 1 snowy owl (*Nyctea nyctea*), from Gridley, Butte County.

alifornia Fish and Game Commission, 1 snowy owl (*Nyctea nyctea*), from Loleta, Humboldt County; 2 foetal young of black-tailed deer (*Odocoileus c. columbianus*), from St. Helena, Napa County.

amp, Chas. L., 2 snakes (*Thamnophis*), 3 amphibians (*Hyla arenicolor* and *Notophthalmus torosus*), from Santa Monica Mountains, Los Angeles County; 4 reptiles, 1 amphibian, from Marin County.

larke, Frank C., 6 sharp-shinned hawks (*Accipiter velox*), 1 bat (*Myotis californicus*), 1 Cooper hawk (*Accipiter cooperi*), 1 red-shafted flicker (*Colaptes c. collaris*), 1 eastern goshawk (*Astur a. atricapillus*), 1 western red-tailed hawk (*Buteo b. calurus*), 1 fawn (*Odocoileus c. columbianus*), 13 moles (*Scapanus latimanus*), 5 white-footed mice (*Peromyscus m. rubidus*), 5 skulls of mammals (*Urocyon, Procyon, Spilogale*), 2 coyotes (*Canis ochropus*), 1 deer skull (*Odocoileus c. columbianus*), 4 meadow mice (*Microtus californicus*), 1 skeleton of golden eagle (*Aquila chrysaetus*), and 1 raven (*Corvus c. sinuatus*), all from Laytonville, Mendocino County.

lay, C. Irwin, 1 bear skull (*Ursus americanus*), 2 skins and skeletons of tree-mouse (*Phenacomys longicaudus*), 2 moles (*Scapanus orarius*), 3 fox sparrows (*Passerella i. townsendi* and *P. i. fuliginosa*), 2 California purple finches (*Carpodacus p. californicus*), 1 junco (*Junco o. thurberi*), from near Eureka, Humboldt County.

oolidge, Dane, 1 skull of badger (*Taxidea*), from Rhyolite, Nev.

e Ong, Ralph, 1 ferruginous rough-legged hawk (*Archibuteo ferrugineus*), from Davis, Yolo County.

ickey, D. R., 5 poorwills (*Phalaenoptilus*), from Colorado River; 6 song sparrows (*Melospiza*), from Contra Costa County; 6 horned larks (*Otocoris*), from San Bernardino County.

irks, W. N., 1 eastern porcupine (*Erethizon dorsatum*), 1 bob-white (*Colinus virginianus*), from State Game Farm, Hayward, Alameda County.

Dixon, J., 5 California jays (*Aphelocoma californica*), from near Danvill Contra Costa County.

Egner, P., 1 chuckwalla (*Sauromalus ater*), from Darwin, Inyo County.

Essenberg, Mrs. C. E., 1 bat (*Myotis yumanensis*), from Payette Valle Idaho.

Evans, J. P., 7 black-crowned night herons (*Nycticorax n. naevius*), fro Pacific Grove, Monterey County.

Evermann, Dr. B. W., 1 bat (*Macrotus californicus*), from Mecca, Rive side County.

Gilman, M. French, skull and horns of mountain sheep (*Ovis nelsoni*), fro head of Whitewater River, San Bernardino County; 2 birds, 3 mammal from near Fort Bidwell, Modoc County.

Graham, J. D., 3 horned toads (*Phrynosoma b. frontale*), from near Wat sonville, Monterey County.

Grinnell, W. F., 4 English sparrows (*Passer domesticus*) from Berkeley.

Hagedoorn, Dr. A. L., 1 jungle fowl (*Gallus varius*), from Pasoeroean, Java

Hansen, Harold E., 1 Forbush sparrow (*Melospiza l. gracilis*), from nea Fairfax, Marin County.

Henshaw, Judge F. W., 9 tule geese (*Anser albifrons gambeli*), 5 white fronted geese (*Anser a. albifrons*), from near West Butte, Sutte County; 1 tooth-billed pigeon (*Didunculus strigirostris*), from Samoa; 1 badger (*Taxidea t. neglecta*), from near Willits, Mendocino County

Hilzinger, O., 7 mammals, 6 birds, from South America.

Howell, A. Brazier, 5 wood rats (*Neotoma a. albigula*), from Fort Lowell, Arizona; 2 petrels (*Oceanodroma socorroensis*), from Los Coronados Islands, Lower California; 2 skulls of hooded skunk (*Mephitis m. milleri*), 1 skull of bare-nosed skunk (*Conepatus m. mearnsi*), from Fort Lowell, Arizona.

Huey, L. M., 3 pallid muskrats (*Ondatra z. pallida*), from Yuma, Arizona.

Johnson, C. B., certain bones of a grizzly bear (*Ursus horribilis californicus*), from near Sunland, Los Angeles County.

Kellogg, Miss Louise, 1 yellowthroat (*Geothlypis*), from Grizzly Island, Solano County.

Kellogg, Remington, 1 dwarf hermit thrush (*Hylocichla g. nanus*), from Berkeley.

Laws, G. O., cranium and antlers of black-tailed deer (*Odocoileus c. columbianus*), from near Douglas City, Trinity County.

Leuschner, R. D., and Rickard, J. F., 1 western red-tailed hawk (*Buteo b. calurus*), from near Berkeley.

Marshall, Dr. B. M., 1 snowy owl (*Nyctea nyctea*), from Arcata, Humboldt County.

Meyer, Dr. K. F., 11 Macaque moneys, from Philippine Islands.

Miller, Dr. L. H., 1 Pacific pallid bat (*Antrozous p. pacificus*), from Berkeley.

Neale, George, 1 tule goose (*Anser a. gambeli*), from Butte Creek, Sutter County; 1 tule goose head, from near Live Oak, Sutter County; 1 frog (*Rana pipiens*), from Lake Tahoe.

Nevin, L. B., 1 white-tailed kite (*Elanus leucurus*), from Paradise, Butte County.

Newberry, Walter C., 12 skulls of coyote (*Canis*), 17 of badger (*Taxidea*), 9 of bobcat (*Lynx*), from Nevada.

Noack, H. R., 1 foreign bird.

Pemberton, J. R., 17 lizards, 2 snakes, lower jaw of deer, from Argentina; 1 snake (*Rhinocheilus lecontei*), from Elk Hills, Kern County; 1 pocket gopher (*Thomomys b. pallescens*), 2 lizards (*Sceloporus* and *Uta*), and bird stomachs, from Colton, San Bernardino County.

Phelps, J. D., 1 alligator lizard (*Gerrhonotus s. webbii*), from Grosmont, San Diego County.

Prescott, H. S., 1 snowy owl (*Nyctea nyctea*), from near Lake Earl, Del Norte County.

Rickard, J. F., 1 roadrunner (*Geococcyx californianus*), from hills near Berkeley.

Riley, Joseph H., 3 bats (*Nycteris borealis* and *Myotis lucifugus*), 1 mole (*Scalops aquaticus*), from Falls Church, Virginia.

Robertson, Mrs. J., 1 gopher snake (*Pituophis catenifer*), from Alma, Santa Clara County.

Robison Bros., 4 foreign birds.

Rupley, J., 1 shrew (*Sorex m. mariposae*), 2 moles (*Scapanus*), from Placerville, Eldorado County.

Rust, H. J., 1 Rocky Mountain hairy woodpecker (*Dryobates v. monticola*), from near Spencer, Idaho.

Simpson, Gene M., 4 sparrow hawks (*Falco sparverius*), 2 short-eared owls (*Asio flammeus*), 1 black merlin (*Falco c. suckleyi*), 1 northwestern shrike (*Lanius b. invictus*), 1 burrowing owl (*Speotyto c. hypogaea*), 1 horned owl (*Bubo v. saturatus*), 1 pigeon hawk (*falco columbarius*), 1 gopher (*Thomomys bulbivorus*), all from Corvallis, Oregon.

Smith, Franklin J., 3 sets of birds' eggs, 1 semipalmated plover (*Aegialitis semipalmata*), 1 marbled murrelet (*Brachyramphus marmoratus*), from near Eureka, Humboldt County.

Smith, G. W., 1 eastern goshawk (*Astur a. atricapillus*), from Jamestown, Tuolumne County.

Stafford, W. A., 1 black-headed grosbeak (*Zamelodia m. capitalis*), from Piedmont, Alameda County.

Stone, George E., 1 miller bat (*Myotis y. saturatus*), from Eel River Dam, Mendocino County; 1 mole (*Scapanus l. latimanus*), from Lafayette, Contra Costa County.

Storer, T. I., 1 rubber snake (*Charina bottae*), from Berkeley.

Sumner, Dr. F. B., 20 shrews (*Sorex pacificus*), from near Eureka, Hur boldt County; 3 reptiles, from Little Lake, Inyo County.

Swarth, H. S., 1 pocket gopher (*Thomomys b. bottae*), from Berkeley.

Taylor, J. B., 1 pocket mouse (*Perognathus*), from Amedee, Lassen Count

Telford, Harry, 28 bats (*Myotis l. altipetens* and *M. y. saturatus*), fro Klamath Falls, Oregon.

Torrey, I. F., and Briggs, R. S., 1 rattlesnake (*Crotalus oreganus*), fro Sierra Nevada in Fresno County.

Townsley, F. S., 1 black bear skeleton (*Ursus americanus*), from Yosemit Valley, Mariposa County.

Waterman, Miss A. L., 1 American eared grebe (*Colymbus n. californicus*) from Barstow, San Bernardino County.

Wear, Miss Winifred N., 1 bat (*Nycteris b. teliotis*), from Fresno.

Wheeler, Mrs. J. W., 2 peccaries (*Pecari a. sonoriensis*), from Santa Catalina Mountains, Arizona.

Wiley, Leo, 1 Arizona mud turtle (*Kinosternon sonoriense*), 1 banded geck (*Coleonyx variegatus*), from Palo Verde, Imperial County.

Willett, G., 1 San Martin Island rock wren (*Salpinctes g. proximus*), from San Martin Island, Lower California.

Williams, Miss F. W., 1 snowy owl (*Nyctea nyctea*), from near Talowa Lake, Del Norte County.

Williams, W., 3 skeletons of coot (*Fulica americana*), 2 skulls of rudd duck (*Erismatura jamaicensis*), from near Alviso, Alameda County.

Wright, Curtis, Jr., 5 foreign birds; 57 sets birds' eggs from Illinois.

LECTURES AND ADDRESSES

SUMMER SESSION, 1916

Anthropology Lectures

aul L. Faye, of Santa Fe:
July 2—The Pagan Cities of New Mexico.
July 9—A Navaho Mystery.
. W. Gifford, Associate Curator of the Anthropological Museum:
July 16—The Incas, the Romans of America.
July 31—The Original Rulers of the Canal Zone.
. T. Waterman, Assistant Professor of Anthropology:
July 23—The Mayas, the Greeks of the New World.
August 6—The Mexicans of Four Centuries Ago.

Lectures on the Appreciation of Art

an C. Hannah, Lecturer in Art, Oxford and Cambridge University Extension Systems:
June 26—The Stern Gloom of Egypt.
June 27—The Cheerful Spell of Greece.
June 28—The Imperial Spirit in Roman Art.
June 29—The Glorious Detail of Byzantium.
June 30—Much Varied Work of Islam.
July 3—Tent Forms of Chinese Art.
July 5—Landscape Gardening of Japan.
July 6—The Massive Forms of Romanesque.
July 7—The Bayeux Tapestry.
July 10—Early Gothic Forms.
July 11—Later Gothic.
July 12—Irish Mediaeval Work.
July 13—The Restoration of Classic Ideals by the Renaissance.
July 14—American Architecture.

Lectures on Browning

. B. Stoughton-Holborn, Lecturer for Oxford and Cambridge University Extension Systems:
July 17—The Nature of Poetry.
July 18—The Approach to Browning.

July 19—The Veiled Personality.
July 20—Browning and the Drama of Life.
July 21—Browning, the Poet of the Soul.
July 24—The Difficult Poem. (Discussion of Typical Poems.)
July 24—Browning, the Humanist.
July 26—Browning's Art Poems.
July 27—Browning's Pathos and Humor.
July 28—Browning's Love Poems.

Contemporary Political Problems of the United States

Thomas H. Reed, Associate Professor of Government:
July 29—Our Unfitness for Self-Government.
July 6—The Machine.
July 11—The Disorganization of State and Local Administration.
July 13—Checks and Balances: the Fear of Power.
July 18—Elective Dictatorship in American Government.
July 20—Our Quadrennial Frenzy.
July 25—Our Judicial Failure.

Country Life Lectures

O. J. Kern, Assistant Professor of Agricultural Education:
July 3—One Lesson from the Two Expositions and its Relation to Better Community Life.
July 10—The Significance of the New Learning in Rural Educatio
July 17—How to Enrich the Social and Play Experiences of Countr Children.
July 24—Some Suggestions as to the Better Living Idea in Countr Life.
July 31—Consolidation of Schools as the Solution of the Problem o Rural Education.

French Lectures

Louis Allard, Assistant Professor of French in Harvard University:
June 28—Alfred de Musset, poète de l'amour.
July 5—Alfred de Vigny, le poète philosophie du romantisme.
July 12—Victor Hugo: La Légende des Siècles.
July 19—La réalisme en poésie et Leconte de Lisle.
July 26—La littérature et la société.
August 2—Quelques réflexions sur la comédie de moeurs en Franc de 1890–1914.

GERMAN LITERATURE LECTURES

ıno Francke, Professor of the History of German Culture, Harvard University:

June 29—The Chivalric Minnesong and the Courtly Epic of the Thirteenth Century.
July 6—Mysticism of the Fourteenth Century.
July 13—Popular Song and Popular Satire from the Thirteenth to the Sixteenth Centuries.
July 20—The Religious Drama of the Fifteenth Century and its Relation to Religious Painting.
July 27—The Humanist Enlightenment: Erasmus.
August 3—The Humanist Revolt: Ulrich von Hutten.

GOTHIC AND RENAISSANCE ART LECTURES

ı C. Hannah, Lecturer in Art, Oxford and Cambridge University Extension Systems:

June 26—Gothic Beginnings.
June 28—Break-up into National Styles During the Fifteenth Century.
June 29—Gradual Passing of Gothic Art.
June 30—Ancient Irish Work.
July 3—Mediaeval Irish Work.
July 5—Italian Gothic Art and Wall Paintings.
July 6—Work of Mediaeval France.
July 7—Gothic Art of Scandinavia and Germany.
July 10—Work of the Renaissance.
July 11—The Dutch School of Painting.
July 12—Old Crome and Other East Anglian Painters.
July 13—Colonial Work in America.
July 14—The Revival of Gothic Art on American Soil.

LECTURES ON GRAPHIC ART

rham W. Nahl, Instructor in Freehand Drawing and Art Anatomy:

July 24—Prints and Reproductions or Pictures.
July 26—The Modern Theory of Color.

LECTURES ON METEOROLOGY

rd Ashman Carpenter, of the United States Weather Bureau:

July 18—Meteorology and Aviation.
July 20—The Meaning of Cloud Forms.

MISCELLANEOUS LECTURES

Miss Mildred Leo Clemens:
June 30—The Message of the Yosemite (illustrated).

James C. Elsom, Assistant Professor of Physical Education, University
Wisconsin:
June 29—The Educational Significance of the Boy Scout Moveme

Chevalier C. Formilli, constructor and artist of the Italian Building, Panar
Pacific International Exposition:
July 14—Color in Architecture.

Morris Jastrow, Jr., Professor of Semitic Languages and Librarian of
University of Pennsylvania:
July 5—The Religion of the Ancient Hebrews.
July 12—The Position of the Priest in the Religion of the Hebre
July 19—The Prophet in the Religion of the Hebrews.
July 26—From Prophet to Rabbi.
August 2—From Rabbi to Preacher.

Isaac M. Rubinow, President of the Casualty, Actuarial, and Statistic
Society of America:
July 10, 11, 12, 13, 14—Five lectures on the subject: Social Insu
ance in Relation to Public Health.

I. B. Stoughton-Holborn, Lecturer for Oxford and Cambridge Universit
Extension Systems:
July 17—Hellenic Pioneers of Our Civilization.
July 18—Individualism and Socialism: Athens and Sparta.
July 19—How the Greeks Saved the World: Marathon and Salamis
July 20—Early Discoveries in Homeric Lands.
July 21—Sokrates.
July 24—Greek Architecture and the Parthenon.
July 25—Athenian Life and Our Own.
July 26—Attic Drama.
July 27—The Tragedy.
July 28—Perikles and the Great War.
July 31—Religion in Greece.
August 1—Alkibiades and the Fall of Athens.
August 2—The Spirit of the Fourth Century Greek Sculpture.
August 3—Plato and Modern Popular Thought.
August 4—The World's Debt to Greece.

Tracy I. Storer, Assistant Curator of Birds, University of California:
August 1—Birds of the Yosemite National Park.
August 3—Mammals of the Yosemite National Park.

LECTURES ON MUSIC

lter Raymond Spalding, Chairman of the Division of Music, Harvard University:

July 26—Great Symphonists.

August 2—Leading Tendencies in Contemporary Music.

POETS AND PHILOSOPHERS OF INDIA

thur W. Ryder, Assistant Professor of Sanskrit:

July 10—Buddhism.

July 17—The Indian Epics.

July 24—Indian Fables and Epigrams.

July 31—Indian Lyric Poetry.

LECTURES ON PRINCIPLES OF ADVERTISING

N. Flint, Professor of Journalism in the University of Kansas:

July 25—Wasteful Advertising.

PUBLIC HEALTH LECTURES

rge L. Bell, Secretary of the California State Immigration and Housing Commission:

June 26, 27, 28, 29, 30—Five lectures on the subject: Preventive or Constructive Housing.

. Allan F. Gillihan, of the Berkeley Board of Health:

July 10, 11, 12, 13, 14—Five lectures on the subject: Welfare Work in Factory and Shop.

. Ernest B. Hoag, Medical Psychologist to the Los Angeles Juvenile Court:

July 24, 25, 26, 27, 28—Five lectures on the subject: The Medical Inspection of Schools.

ss Anna C. Jammé, Director of the Bureau of Registration of Nurses, California State Board of Health:

July 3—A Historical Sketch of the Development of the Health Visitor.

July 5—The Baby Welfare Nurse.

July 6—The School Nurse.

July 7—Industrial Nursing.

ith L. M. Tate, Director of the Tuberculosis Bureau of the State Board of Health:

July 17—The History of the Tuberculosis Movement.

July 18—The Development of Sanatoria for Tuberculosis.

July 19—National and State Legislation for the Control of Tuberculosis.

July 20—Social and Economic Aspects of Tuberculosis and Co-op-ative Agencies for its Control.
July 21—The Tuberculosis Problem in California.

Religions and Literature of Ancient India

Arthur W. Ryder, Assistant Professor of Sanskrit:
June 26—The Vedanta Philosophy.
July 3—The Sankhya Philosophy.
July 10—Buddhism.
July 17—Indian Epics.
July 24—Indian Fables and Epigrams.
July 31—Indian Lyric Poetry.

Lectures on Social and Economic Questions

Professor F. W. Taussig, Harvard University:
July 17—Co-operation.
July 18—Labor Organizations.
July 19—Methods of Arbitration.
July 20—Principles of Arbitration.
July 21—Social Insurance.
July 24—Agencies for Bettering the Wages Systems.
July 25—Public Ownership.
July 26—Inheritance and Inequality.
July 27—Ideals of Social Justice.
July 28—Socialism.

Spanish Lectures

Ramón, Jaén, Professor of Spanish, United States Military Academy, Wes Point:
June 27—Toledo, la ciudad imperial.
July 11—Salamanca, la vieja universidad española.
July 18—La Mancha, la tierra de Den Quijote.
July 25—La conciencia de España en dos escritores de hoy dia Pie Baroja.
August 2—La conciencia de España en dos escritores de hoy dia: Azorin.

ACADEMIC YEAR, 1916–17

Anthropology Lectures

Paul L. Faye, a French traveler:
April 15—Habitat and Climatic Conditions (illustrated).
April 22—Nomadic Tribes in Past History.
April 29—Village Dwellings and Present Conditions (illustrated).

W. Gifford, Associate Curator of the Anthropological Museum:
August 13—The Cliff Dwellers.
August 20—The Mound Builders.
August 27—The Prehistoric Californians.
September 3—The Pueblo Indians (illustrated).
September 10—The Plains Indians.
September 17—The California Indians.
September 24—The Eskimos.
October 1—The Totem-pole Indians.
October 29—The Life and Art of the Cave Man.
November 12—The Prehistoric Egyptians (illustrated).
November 19—The Pyramid Egyptians.
November 26—The Egyptian Empire.
December 3—Graeco-Roman Egypt.
March 25—Vanity vs. Decency (illustrated).
April 1—Deformations and Extreme Styles (illustrated).
April 8—The Clothes We Wear (illustrated).
May 6—The Land of Egypt and its Inhabitants (illustrated).
May 13—The Predynastic Egyptians (illustrated).
May 20—Egyptian Records and Chronology (illustrated).
May 27—Egyptian Burial Customs (illustrated).

L. Kroeber, Associate Professor of Anthropology and Curator of the Anthropological Museum:
January 7—Living Varieties of the Human Species.
January 14—The Zuñi Indians (illustrated).

eonard Outhwaite, Teaching Fellow in Anthropology:
October 8—The Missing Link (illustrated).
October 15—The Cave Men of Europe.
October 22—The Art of the Cave Man.
December 10—The Beginnings of Transportation (illustrated).

r. Paul Radin, of the Anthropological Division of the Geological Survey of Canada:
February 11—Ancient and Modern Peoples of Mexico (illustrated).
February 18—Ancient Civilization of Mexico (illustrated).
February 25—The Zapotecs (illustrated).
March 4—The Wild Tribes of Mexico (illustrated).
March 11—Indian and White: The Mestizo (illustrated).
March 18—The Modern Indian of Mexico and His Future (illustrated).

M. Washburn, Assistant Professor of Classical Archaeology:
December 17—Great Ancient Art: Paintings of the Mysterious Etruscans (illustrated).

December 24—"Self-Talking" picture description of "The Or inal Native Sons: Indians of the Golden State."
December 31—A picture serial on the Antiquities of Mexico.

T. T. Waterman, Assistant Professor of Anthropology:
August 6—The Mexicans of Four Centuries Ago.
January 21—The Art of the Ancient Americans (illustrated).
January 28—The Mediterranean Race (illustrated).
February 4—Thibet.

Child Welfare Lectures

(Delivered at the Museum of Anthropology.)

Edna L. Barney, Assistant in Surgery:
March 22—Injuries During Childhood (illustrated).

Dr. Henry Horn, Assistant in Laryngology, Otology, and Rhinology:
March 25—How a Mother Can Tell Whether Her Children have Ad noids or Tonsils (illustrated).

Development of Painting

Eugen Neuhaus, Assistant Professor of Decorative Design:
January 29—Changes in the Aesthetic Ideal.
January 31—Pictorial Composition: Balance.

Discovery Day Lecture

H. Morse Stephens, Sather Professor of History:
October 12—Italy and the Discovery of America. (This is the fir of a series of lectures to be given in successive years on Discover Day.)

Economics Lectures

Julean Arnold, '02, United States Commercial Attaché for China and Japan
September 26—Economic and Social Conditions in China of Toda

Ira B. Cross, Assistant Professor of Economics on the Flood Foundation
November 7—Money and Prices.
November 14—Credit and Banking.
March 27—Trade Union Organization.
April 3—Trade Union Policies and Methods.

Stuart Daggett, Associate Professor of Railway Economics on the Floo Foundation:
October 3—Railroads and Trusts.
November 28—Tariff.
February 20—The Nature of Interest.

Henry R. Hatfield, Professor of Commerce on the Flood Foundation and Dean of the College of Commerce:
September 26—The Organization of Industry.
February 27—The Nature of Business Profits.

Lincoln Hutchinson, Professor of Commerce on the Flood Foundation:
September 5—Natural Resources.
April 10—Socialism.

F. R. Macaulay, Instructor in Economics:
March 20—Business Cycles.

C. H. Parker, Assistant Professor of Industrial Economy:
April 17—Anti-pauperism.
April 18—Human Motives in Economic Life.

Jessica B. Peixotto, Associate Professor of Social Economics:
August 29—Wants and Their Satisfaction.

Carl C. Plehn, Professor of Finance on the Flood Foundation:
September 12—Human Beings.
September 19—Capital Goods.
October 10—Market Organization.
October 17—Value.
March 6—Public Funds and Expenditures.
March 13—Principles of Taxation.

Faculty Research Lecture

Herbert Eugene Bolton, Professor of American History:
March 22—The Mission as a Frontier Institution in the Spanish-American Colonies.

Forestry Lectures

L. A. Barrett, Assistant District Forester:
January 23—Recreational Use of the National Forests.

Swift Berry, Logging Engineer, U. S. Forest Service:
March 13—The Appraisal of National Forest Stumpage.

oert Dubois, District Forester, United States Forest Service:
April 3—The Purposes of National Forest Administration.

. H. Fowler, District Engineer, U. S. Forest Service:
March 20—Water Power and the National Forests.

. P. Godwin, Forest Engineer, U. S. Forest Service:
March 6—The Protection of the National Forests from Fire.

Roy Headley, Assistant District Forester, U. S. Forest Service:
February 20—Public Service and the National Forests.

Ralph Hopping, Forest Examiner, U. S. Forest Service:
February 6—Insect Control in the National Forests.

E. P. Meinecke, Consulting Pathologist, U. S. Forest Service:
January 30—The Life of the Forest.

C. E. Rachford, of the U. S. Forest Service:
February 24—Grazing Management.

C. Stowell Smith, Assistant District Forester, U. S. Forest Service:
March 27—The Economics of the Lumber Industry.

Luther Whiteman:
February 13—The Forest Officer as an Advertising Man.

T. D. Woodbury, Assistant District Forester, U. S. Forest Service:
February 27—Use of National Forest Timber Resources.

French Lectures

M. Jules Bois, Vice-president of the ''Société des Gens de Lettres'':
April 3—Le Fondment de la Démocratie Nationale.
April 5—La Politique de la Troisième Rèpublique.
April 7—Le Femme Française.
April 9—De Philosophes et les Savants.
April 11—Le Littérature et le Théâtre.
April 14—La Démocratie en France et aux Etats-Unis.

''Great Books'' Lectures

Charles Mills Gayley, Professor of the English Language and Literature
September 1—Books of Wisdom.
September 8—The Book of Job.
September 15—The Book of Job.
September 22—The Book of Job.
September 29—Plato's Republic.
October 6—Plato's Republic.
October 13—Plato's Republic.
October 20—Plato's Republic.
November 2—Ecclesiastes and the Book of Wisdom.
November 10—Ecclesiastes and the Book of Wisdom.
November 24—Ecclesiastes and the Book of Wisdom.
December 1—Ecclesiastes and the Book of Wisdom.
December 8—Omar Khayyām.

Greek Life from the Monuments

Oliver M. Washburn, Assistant Professor of Classical Archaeology:
August 29—Greece: the Land and the Sea.
September 5—Ancient Customs in Modern Greece.

September 12—The Greek House.
September 19—Household Furniture in Ancient Greece.
September 26—Greek Dress.
October 17—Greek Education.
October 24—Greek Education.
November 17—Greek Armor and Warfare.
November 21—Greek Ships.

CENTERS OF GREEK LIFE

January 23—Troy.
January 30—Thera (illustrated).
February 6—Ephesus (illustrated).
February 13—Miletus (illustrated).
February 27—Priene (illustrated).
March 6—Priene (illustrated).
March 13—Pergamon (illustrated).
March 20—Delos (illustrated).
April 3—Delphi (illustrated).
April 10—Olympia (illustrated).
April 17—Syracuse (illustrated).

GREEK LECTURES

aul Shorey, Sather Professor of Classical Literature:
September 11—Plato and the Philosophy of Flux from Heraclitus to Bergson.
September 18—Plato and the Philosophy of Flux from Heraclitus to Bergson.
September 25—The Genius of Neo-Platonism.
October 2—The History of Neo-Platonism.
October 16—Plato and Religion.
October 17—The Pace that Killed Athens.
October 23—Plato and Historical Christianity.
October 24—Aristophanes.
October 30—Plato and Poetry.
October 31—The Case of Euripides.
November 6—Plato and Poetry.
November 8—Athens' Fin de Siècle.
November 13—Plato and Education.
November 20—Plato and Nineteenth Century English Literature.
November 27—Plato and Nineteenth Century English Literature.
December 4—Jest and Earnest in Plato.

History of Textiles

Dr. R. Meyer Riefstahl:
- September 5—Byzantine Textile Art.
- September 7—Woven Fabrics and Tapestries Excavated from Egyptian Tombs.
- September 12—Chinese Weaves of the Tang Period; Roman Inf ence on China.
- September 14—Chinese Textile Art of the Thirteenth Century an its Influence on Italian Textile Art of the Fourteenth Century.

Hitchcock Lectures

R. A. Millikan, Ph.D., Sc.D., Professor of Physics in the University o Chicago:

On the general subject, Electricity and Radio-Activity, and th Structure of the Atom.
- January 18—Electricity in the Nineteenth Century.
- January 19—X-Rays and the Birth of the New Physics.
- January 22—The Electron: Its Isolation and Measurement.
- January 23—Brownian Movements and Sub-electrons.
- January 25—The Structure of the Atom.
- January 26—The Nature of Radiation.

Jurisprudence Lectures

Roscoe Pound, Ph.D., LL.D., Dean of Harvard Law School:

On the general subject, Modern Juristic Thought and Its Significance for American Law.
- August 21—What is Jurisprudence?
- August 22—The Nineteenth Century School of Juristic Thought.
- August 23—The Social-Philosophical School of Juristic Thought.
- August 24—The End of the Law.
- August 25—The Scope and Subject Matter of the Law; Application and Enforcement of the Law.
- August 26—Law in Books and Law in Action.

H. Morse Stephens, Sather Professor of History:
- November 2—The Inns of Court.

Lick Observatory Lectures

W. W. Campbell, Director of the Lick Observatory:
- March 20—A Study of the Distribution of Nebulae.

W. H. Wright, Astronomer:
- March 24, 27—Gaseous Nebulae, and Their Relations to Stars.

MINING LECTURES

William E. Colby, Lecturer on the Law of Mines and Water:
February 12—Extra-lateral Litigation: the Law of the Apex.

Edwin Higgins, Chief Mine Inspector of the Industrial Accident Commission of the State of California:
September 4—Safety First in Mining Work.

W. J. Loring, Consulting Mining Engineer:
November 27—Renewed Activity on Mother Lode in California.

Henry Mace Payne, Ph.D., Sc.D., Consulting Mining Engineer:
December 7—Mining the Frozen Gravels of the Arctic.

T. A. Rickard, Editor of the Mining and Scientific Press:
January 25, 26, 31, February 1, 2—Technical Writing.

MISCELLANEOUS LECTURES

Julean Arnold, '02, Commercial Attaché of the United States for China and Japan:
September 26—China (illustrated).

Miss Kathleen Burke, of the Scottish Women's Hospital for Field Service:
April 16—The Work of the Scottish Women's Field Service Hospital in Wartime.

A. O. Eberhart, Ex-Governor of Minnesota:
April 11—The League to Enforce Peace.

Ludwig Ehrlich, B. Litt. (Oxon.), D. Jur. (Lwów), Lecturer in Political Science:
March 5—Modern Poland.

William W. Ellsworth, President of the Century Company:
March 21—Forty Years of American Literature.

Henry Hurwitz, Chancellor of the Intercollegiate Menorah Association:
September 5—The Bible and the Law of Nations.

Gordon J. Laing, Professor of Latin, University of Chicago; Lecturer on the Sather Foundation:
March 7—Ancient Etruria.
March 14—Roman Africa (illustrated).

Miss Helen Losanitch, Official Representative of the Servian Relief Committee of America:
March 30—Servia of Today.

ercival Lowell, LL.D., Director of the Lowell Observatory, and Resident Professor of Astronomy in the Massachusetts Institute of Technology:
October 16—Mars: Forecasts and Fulfillment.

J. C. Merriam, Professor of Palaeontology and Historical Geology:
November 8—Suggestions as to Origin of Petroleum in California

Swarna K. Mitra, of Calcutta:
May 1—The Modern Architecture of India (illustrated).

Robert E. Peary, Rear-Admiral U.S.N., Retired; Discoverer of the Nort Pole:
April 12—Air Power for the United States.

Dr. Paul Radin, of the Anthropological Department of the Geological Survey of Canada:
February 13—Myth and Tale.
February 20—Plot Development.
February 27—Prose and Poetry.

Dr. Jerome Hall Raymond, Lecturer in University Extension Division:
December 6—Belgium: A Burnt Offering to the God of War.

Hon. John E. Richards, of the California District Court of Appeal:
February 7—The Trial of Jesus.

Raymond Robins:
February 23—The Challenge of the Changing Social Order.
February 26—College Men and Civic Leadership.
February 27—Fundamentals in the Industrial Conflict.
February 28—Mastery and Power.
March 1—Faith.

Spiro Sargentich, '98, M.D., for the past two years army surgeon with the Servian troops:
September 26—Wartime Experiences in the Balkans.

Professor B. K. Sarkar, member of the National Council of Education, Calcutta, and Director of the Panini Academy of Allahabad, India:
December 4—Hindu Literature.

Clifford J. Shepherd, Assistant Cashier of the Federal Reserve Bank, Twelfth District:
November 8—The Federal Reserve System.

Bartlett L. Thane, '99, Manager of the Alaska Gold Mining Company:
October 30—Mining in Alaska.

Count Ilya Tolstoy:
April 2—Count Leo Tolstoy and the Russian Revolution.

Leonard C. Van Noppen, Queen Wilhelmina Lecturer to Columbia University:
On the general subject, History and Literature of the Netherlands.
March 13—The Dutch Renaissance of the 17th Century.
March 14—Vondel, the Dutch Shakespeare, the Poet of the Sublime.

March 15—Vondel's Lucifer: Its Influence on Paradise Lost.
March 15—Holland's Influence on American Laws and Institutions.
March 16—Van Eden, the Dutch Tolstoy, and the Poets of Today.

Charles William Wallace, Ph.D., Professor of English in the University of Nebraska:
February 8—New Shakespeare Discoveries from English Archives.

LECTURES ON MARKETING

John B. Selander:
March 22—Merchandizing.
March 29—The Wholesaler.
April 5—The Office.
April 12—The Sales Department.
April 19—Salesmanship.
April 26—Advertising.

LECTURES ON MUSIC

Cecil Forsyth, of New York:
April 24—Origins of Music and Greek Musical Instruments.
April 26—Greek Theorists and the Greek Musical System.

PETROLEUM CLUB LECTURES

A. F. L. Bell, Chief Engineer of the Associated Oil Company:
November 28—The Early History of Oil Production in California.

I. O. Lewis, Petroleum Technologist of the United States Bureau of Mines:
March 29—Increasing the Recovery of Petroleum by Means of Compressed Air (illustrated).

M. E. Lombardi, Superintendent of Construction, Kern Trading and Oil Company:
January 31—Methods of Drilling Employed in the San Joaquin Valley Oil Fields (illustrated).

R. P. McLaughlin, State Supervisor of Oil and Gas Fields:
February 15—Water Problems in the California Oil Fields.

R. W. Pack, Geologist, U. S. Geological Survey:
December 8—Geology of the San Joaquin Valley Oil Fields.

. M. Paine, Superintendent of the Honolulu Consolidated Oil Company:
April 10—Production and Utilization of Natural Gas in the California Oil Fields.

PHILOSOPHICAL UNION LECTURES

eorge P. Adams, Assistant Professor of Philosophy:
March 30—Platonism and Christianity.

Mary Whiton Calkins, M.A., LL.D., Litt.D., Professor of Philosophy and Psychology in Wellesley College; Lecturer on the Mills Foundation:

- November 24—Plato's Teaching About the Soul.

George H. Howison, M.A., LL.D., Professor of Philosophy, Emeritus:

- October 27—Plato as a Permanent Critic of Religion.

J. Loewenberg, Instructor in Philosophy:

- February 23—Classical and Romantic Trends in Plato.

Arthur U. Pope, Assistant Professor of Philosophy:

- December 8—The Method of Plato.

C. H. Rieber, Professor of Logic.

- April 27—The Platonic Logic.

Paul Shorey, Sather Professor of Classical Literature and Professor of Greek in the University of Chicago:

- September 29—The Influence of Plato upon Modern Philosophy from Descartes to Schopenhauer.

Philosophy Lectures

Mary Whiton Calkins, A.M., LL.D., Litt.D., Professor of Philosophy and Psychology in Wellesley College; Lecturer on the Mills Foundation:

- September 4—What is it to think?
- September 6—What is it to feel?
- September 8—What is it to will?
- September 11—What is it to have faith? To believe?
- September 13—How do we know that 2 x 2 is 4?
- September 15–18—May we reason that God exists?
- September 20—How can God permit error?
- September 22—May the philosopher have a religion?
- September 25–27—May we reason that external things exist?
- September 29—How is mind related to body?
- October 2—Is the world a machine?
- October 9—Do idealists deny the reality of the physical world?
- October 11—Must we reason that matter exists to cause our percepts?
- October 13—May we reason from nature to God?
- October 16—Is man a machine?
- October 18—Is the soul a product of organic evolution?
- October 20—The Materialistic Position.
- October 23—The Answer of Idealists to Materialists.
- October 25 and 27—Idealistic Natural Science.
- October 30—How do I know that you exist?
- October 31—Does Berkeley prove the wisdom and goodness of the "Author of Nature"?

November 3—Might Berkeley accept the theory of evolution?
November 6—Is the philosopher a poet or a logician?
November 8—Modern Critics of Idealism, Bertrand Russell, Montague, Perry.
November 10—Is the self a "Bundle of Ideas"?
November 3—Many selves or one self? (James and Royce.)
November 15—May we conceive of an absolute self?
November 17—Is nature unconscious or "uncommunicable"?
November 20—What is time? (St. Augustine and Bergson.)
November 22—Is change an illusion?
November 27—May absolute self be conceived as good? (The Problem of Evil.)
November 29—Must the human self be absorbed in the absolute?
December 4—How is the human self related to society?
December 6—Is the human self free?
December 8—Is the human self immortal?

PHYSICS LECTURES

R. B. Abbott, Instructor in Physics:
  September 8—Faint Sounds Made Loud.

Elmer E. Hall, Associate Professor of Physics:
  December 8—The Mechanical Equivalent of Light.

L. T. Jones, Instructor in Physics:
  October 20—Recent Work on Gravitation.
  April 6—The Inertia of Electrons.

E. P. Lewis, Professor of Physics:
  February 23—Experimental Evidence as to the Nature of Light Emission Centers.

Ralph S. Minor, Associate Professor of Physics:
  November 3—The Reflection of Coefficients of Metals for the Polarized Components of Light.

W. J. Raymond, Associate Professor of Physics:
  October 6—The Resistance of a Spark-Gap.
  March 9—Oscillating Systems with Elastic Connection.

W. P. Roop, Instructor in Physics:
  November 17—Water in Soils.

POLITICAL SCIENCE LECTURES

Ludwik Ehrlich, Lecturer in Political Science:
  April 6—Austria-Hungary: its Peoples and Government.
  April 13—The Government of England during the Present War.
  April 20—British Emergency Legislation during the Present War.

SCRIPPS BIOLOGICAL LECTURES

William E. Ritter, Professor of Zoology and Scientific Director of the Scripps Institution for Biological Research:
- March 6—Facts which any Causal Theory of Evolution must Explain (illustrated).
- March 13—Why Biology Formerly Exaggerated the Importance of the Hypothesis of the Survival of the Fittest.
- March 19—What is Actually Known about the Causes of Evolution.
- March 26—Integration, the Keynote to a Reformation of Evolutional Philosophy.

ANNUAL BARBARA WEINSTOCK LECTURE ON "THE MORALS OF TRADE"

Willard E. Hotchkiss, Dean of the School of Commerce, Northwestern University:
- April 13—Higher Education and Business Standards.

ZOOLOGY LECTURES

A. L. Barrows, Instructor in Zoology:
- January 22—The Boring Molluscs of the Pacific Coast (illustrated).

H. C. Bryant, Economic Ornithologist, California Museum of Vertebrate Zoology:
- March 12—The Economic Importance of some Common Birds (illustrated).
- March 19—The Poisonous and Non-Poisonous Reptiles of California (illustrated).

Joseph Grinnell, Director of the California Museum of Vertebrate Zoology:
- January 29—Midwinter Birds of the University Campus.
- February 5—The Natural History of California Mammals.
- February 12—Furs and Fur-bearing Mammals of California (illustrated).

S. J. Holmes, Associate Professor of Zoology:
- April 16—Crustaceans of the Pacific Coast (illustrated).
- April 23—The Life of a Barnacle (illustrated).

C. A. Kofoid, Professor of Zoology and Assistant Director of the Scripps Institution for Biological Research:
- April 9—Jungle Life in India (illustrated).

Dr. Alfred G. Mayer, of Princeton University, Director of the Marine Laboratory of the Carnegie Institution of Washington:
- February 19—Problems of the Coral Reef (illustrated).

Ellis L. Michael, Zoologist and Administrative Assistant, Scripps Institution for Biological Research:
- April 2—Floating Animals of the Sea and their Problems.

William E. Ritter, Professor of Zoology and Scientific Director of the Scripps Institution for Biological Research:
March 26—Field and Laboratory Work of the Scripps Institution.

Tracy I. Storer, Assistant Curator of Birds in the California Museum of Vertebrate Zoology:
February 26—The Frogs, Toads, and Salamanders of California (illustrated).
March 5—The Game Birds of California (illustrated).

DEATHS OF MEMBERS OF THE UNIVERSITY

Albright, George Leslie, Native Sons' Traveling Fellow in History, December 15, 1916.

Boalt, Elizabeth Josselyn, friend and benefactor of the University, February 10, 1917.

Bonnheim, Albert, friend and benefactor of the University, December 23, 1916.

Davis, Horace, President of the University from 1888 to 1890, July 12, 1916.

Graves, Verne Frye, a Freshman in the College of Mechanics, March 24, 1917.

Howison, George Holmes, Mills Professor of Intellectual and Moral Philosophy and Civil Polity, 1884–1909; Professor of Philosophy, Emeritus, 1910–1917, December 31, 1916.

Kerr, William Watt, Clinical Professor of Medicine, April 27, 1917.

Morgan, Everett Gillis, a Junior in the College of Letters and Science, November 9, 1916.

O'Brien, Irene Marguerite, a Freshman in the College of Letters and Science, March 5, 1917.

Royce, Josiah, Ph.D., LL.D., Litt.D., Alford Professor of Natural Religion, Moral Philosophy, and Civil Polity in Harvard University, a graduate of the University of California with the Class of 1875; Instructor in English Literature and Logic, 1878–1882, September 14, 1916.

Stubenrauch, Arnold Valentine, Professor of Pomology, February 12, 1917.

von Hoffman, Charles A., Emeritus Professor of Gynecology, May 14, 1917.

BIBLIOGRAPHY

PUBLISHED WRITINGS OF OFFICERS OF THE UNIVERSITY

ABBOTT. R. B., Instructor in Physics.

Laboratory Uses of Thermos Bottles. School Science and Mathematics, vol. 17, pp. 11–14; Jan. 1917.

ADAMS. C. E., Martin Kellogg Fellow for 1915; Government Astronomer of New Zealand.

Astronomical Tables for the Year 1917. N. Z. Gazette; Dec. 7, 1916.

New Zealand Time Service Arrangements, Notice No. 4: Time-Ball at Lyttelton. *Ibid.*, Feb. 1, 1917.

New Zealand Time Service Arrangements, Notice No. 5: Position of Observatory and General Time Service Arrangements. *Ibid.*, Mar. 15, 1917.

New Zealand Time Service Arrangements, Notice No. 6: Time Signal at Aukland. *Ibid.*, Mar. 29, 1917.

ADAMS, F., Professor of Irrigation Investigations.

Investigations of the Economical Duty of Water for Alfalfa in Sacramento Valley, California, 1910–1915 [with S. H. Beckett, W. A. Hutchins, O. W. Israelson, and R. D. Robertson]. Bull. no. 3, Calif. State Dept. of Engineering, 78 pp.; Apr. 1917.

Same. Fifth Biennial Report, Calif. State Dept. of Engineering, Apx. C, pp. 1–78; Mar. 1917.

Irrigation Districts in California, 1887–1915, ed. 2, rev. Bull. no. 2, Calif. State Dept. of Engineering, pp. 1–48; Apr. 1917.

Same. Fifth Biennial Report, Calif. State Dept. of Engineering, Apx. B, pp. 1–48; Mar. 1917.

Irrigation of Orchards. Calif. Citrograph, vol. 1, no. 2, pp. 2–3; May 1917.

Progress Report of Co-operative Irrigation Investigations in California. Fifth Biennial Report, Calif. State Dept. of Engineering, pp. 166–72; May 1917.

Some Changing Aspects of California Irrigation. Univ. Calif. Jour. of Agric., vol. 5, no. 8; May 1917.

ADAMS, G. P., Associate Professor of Philosophy.
Review: Durkheim. *Elementary Forms of the Religious Life: a Stud in Religious Sociology.* Harvard Theological Rev., vol. 10, pp. 201–04 Apr. 1917.

ADAMS, R. L., Associate Professor of Agronomy.
Egg Prices for Five Years. Calif. Poultry Jour., vol. 2, p. 9; Nov. 191
Fieldmen. Sugar, vol. 18, p. 564; Nov. 1916.
Selecting the Beet Growers. *Ibid.*, vol. 18, p. 518; Oct. 1916.
Sugar Beets vs. Morning Glory. *Ibid.*, vol. 19, pp. 94–95; Mar. 1917.
Tractors for Sugar Beet Farmers. *Ibid.*, vol. 18, pp. 609–11; Dec. 191
Working Basis for Leasing Lands. Country Gentleman, vol. 81, p. 2069 Dec. 1916.

AITKEN, R. G., Astronomer in Lick Observatory.
Measures of Comets in 1915 and in 1916. Lick Observatory Bull., vol. 9 pp. 64–65; May 1917.
The Moon. Publ. of the Astron. Soc. of the Pacific, vol. 29, pp. 121–32 June 1917.
Note on Barnard's Proper Motion Star. *Ibid.*, vol. 28, p. 198; Oct. 1916
Notes on Certain Double Star Orbits. *Ibid.*, vol. 28, pp. 201–02; Oct 1916.
Notes on Some A Double Stars. *Ibid.*, vol. 28, pp. 276–77; Dec. 1916.
Percival Lowell: Obituary Note. *Ibid.*, vol. 28, p. 267–68; Dec. 1916.
Review: *Annals of the Dearborn Observatory, Northwestern University, Vol. I. Ibid.*, vol. 28, pp. 216–18; Oct. 1916.
Total Eclipse of the Sun. *Ibid.*, vol. 29, pp. 25–40; Feb. 1917.

ALBRO, F. W., Instructor in Nutrition.
Mineral Elements of the Avocado. Annual Report of the Calif. Avocado Assoc., pp. 23–27; 1916.

ALLEN, J. T., Associate Professor of Greek.
College Students Beginning the Study of Greek. Classical Jour., vol. 12, pp. 331–32; Feb. 1917.
Review: Fiechter. *Die baugeschichtliche Entwicklung des antiken Theaters.* Classical Philology, vol. 12, pp. 214–15; Apr. 1917.
Review: Stephens. *The Greek Spirit.* Classical Weekly, vol. 10, p. 55; Nov. 1916.
Review: Stoughton-Holborn. *The Need for Art in Life. Ibid.*, vol. 10, p. 54; Nov. 1916.

ASH, R. L., Instructor in Pediatrics.
Contribution to the Diagnosis of Spinal Cord Tumors in Childhood. Amer. Jour. of Diseases of Children, vol. 13, pp. 487–94; June 1917.

BAADE, H. J., County Farm Adviser.
Chinese Egg Production Bulletin. 12 pp.; May 1917.
Concrete Septic Tank. Pacific Rural Press; May 19, 1917.

Same. Calif. Cultivator; May 26, 1917.

Concrete Septic Tank Bulletin. 11 pp.; Apr. 1917.

Covercrops. Sacramento Bee; Dec. 30, 1916.

Livestock in Napa County. Calif. Cultivator; Feb. 17, 1917.

Napa County Farm Bureau Monthly, vol. 2, no. 5 to vol. 3, no. 4; July 1916–June 1917.

Tree Surgery. Sacramento Bee; Mar. 31, 1917.

What Humus Is. *Ibid.*, Mar. 24, 1917.

ABCOCK, E. B., Professor of Genetics.

Plant Breeding for Amateurs. Univ. Calif. Jour. of Agric., vol. 4, pp. 172–75; Jan. 1917.

Somatic Segregation: a Misleading Expression [with F. E. Lloyd]. Jour. of Heredity, vol. 8, pp. 82–89; Feb. 1917.

Studies in Juglans III: 1, Further Evidence That the Oak-like Walnut Originates by Mutation. 2, Parallel Mutation in *Juglans Hindsii.* Univ. Calif. Publ. Agric. Science, vol. 2, pp. 71–80; Sept. 1916.

ARROWS, D. P., Dean of the Faculties; Professor of Political Science.

Legislative Failure and Reform. Calif. Law Rev., vol. 5, no. 2, pp. 129–41; Jan. 1917.

ATCHELOR, L. D., Associate Professor of Plant Breeding.

By-products and Principal Products of the Fruit Industry. Better Fruit, vol. 2, no. 1, pp. 18–22; Aug. 1916.

Handling the By-products of the Fruit Business. Utah Farmer, vol. 12, no. 45, June 1916; no. 47, July 1916.

Horticulture in Utah. L. H. Bailey. Standard Cyclopedia of Horticulture, vol. 4, pp. 2272–75; 1916.

The Walnut in California. *Ibid.*, vol. 6, pp. 3501–04; 1917.

EACH, J. R., Assistant in Veterinary Science.

Bacillary White Diarrhoea or Fatal Septicemia of Chicks and Coccidiosis or Coccidial Enteritis of Chicks. Univ. Calif. Agric. Exp. Sta. Circ., no. 162, 8 pp.; Mar. 1917.

ECKETT, S. H., Assistant Professor of Irrigation Practice.

Investigations of the Economical Duty of Water for Alfalfa in Sacramento Valley, California, 1910–1915 [with F. Adams, W. A. Hutchins, O. W. Israelson, and R. D. Robertson]. Bull. no. 3, Calif. State Dept. of Engineering, 78 pp.; Apr. 1917.

Same. Fifth Biennial Report, Calif. State Dept. of Engineering, Apx. C; Mar. 1917.

EHLOW, W. W., Voluntary Assistant in Medicine.

Group Study: Report of One Hundred and Fifty Cases. Jour. of the Amer. Med. Assoc., vol. 68, pp. 360–61; Feb. 3, 1917.

Bell, C. H., Instructor in German.
Book Review. Modern Language Bull., vol. 3, p. 22; Mar. 1917.

Berry, S. S., Research Zoologist, Scripps Institution for Biological Researc
Additional Records of Mollusca from San Bernardino County, Californi Nautilus, vol. 30, pp. 37–39; Aug. 1916.
Auroral Display of August 26. Science, n.s., vol. 44, p. 679; Nov. 191
English Sparrow Campaign in Redlands. Calif. Fish and Game, vol. 3 pp. 76–77; Apr. 1917.
On Moschites Verrucosa (Verrill) and Its Allies. Proc. of the Acad. o Natural Sciences, Philadelphia, 1917, pp. 2–6; Mar. 1917.
Random Notes on the Collection and Preservation of Chitons. Lorquinia, vol. 1, pp. 73–76; May 1917.
San Diego Drift Shells. Nautilus, vol. 30, p. 83; Nov. 1916.

Best, E. J., Assistant in Medicine.
Fractional Examination of the Stomach Contents. Jour. of the Amer Medical Assoc., vol. 67, pp. 1083–86; Oct. 7, 1916.

Biddle, H. C., Assistant Professor of Chemistry.
Influence of Varying Concentration of Hydrogen Ion on the Optical Rotation of the Isomeric Alkaloids, Cinchonine, Cinchonidine, and Cinchotoxine [with T. Watson]. Jour. of the Amer. Chemical Soc., vol. 39, pp. 968–74; May 1917.

Bine, R., Assistant in Medicine.
Duodenal Ulcer and Tetany. Jour. of the Amer. Medical Assoc., vol. 68, pp. 1315–17; May 5, 1917.
Exfoliative Dermatitis Following Neosalvarsan Injections. Boston Medical and Surgical Jour., vol. 175, no. 3, pp. 96–99; July 20, 1916.
Innominate Aneurysm with Rupture. Jour. of the Amer. Medical Assoc., vol. 68, pp. 113–16; Jan. 13, 1917.

Bioletti, F. T., Professor of Viticulture and Enology.
Can Vine Mildew Be Controlled? Sun-Maid Herald, vol. 2, no. 1; July 1916.
Changing Vineyards by Grafting. Southern Fruit Grower, vol. 21, no. 1; Jan. 1917.
Conditions and Problems After the War. National Economic League Quarterly, vol. 2, no. 3; Dec. 1916.
Currant Grapes. Pacific Rural Press; Nov. 1916.
The Gros Colman and Its Aliases. *Ibid.*, Sept. 30, 1916.
Little Leaf of the Vine [with L. Bonnet]. Jour. of Agric. Research, vol. 10, p. 6; May 6, 1917.
Mistakes in Pruning Sultanina. Pacific Rural Press; Feb. 17, 1917.
Olive. L. H. Bailey. Standard Cyclopedia of Horticulture, vol. 4, pp. 2334–39; 1916.

Olive Size Grades. Olive Jour., vol. 1, no. 5; Oct. 1916.

The Pickling Olive in France. *Ibid.*, vol. 1, no. 8; Jan. 1917.

Possibilities of Currant Growing in California. Sun-Maid Herald, vol. 2, no. 1; Jan. 1917.

Practical Directions for the Proper Extraction of Olive Oil. Olive Jour., vol. 2; June 1917.

Progress of Olive Pickling in California. *Ibid.*, vol. 1, no. 10; Mar. 1917.

Pruning of Young Olive Trees. *Ibid.*, vol. 1, no. 3; July 1916.

Size Grades for Olives. *Ibid.*, vol. 1, no. 3; Aug. 1916.

Some Observations on the Pruning of Olives. Pacific Rural Press; Feb. 24, 1917.

Substitutes for Potassium Meta-bi-Sulfite. Wholesalers' and Retailers' Rev.; Aug. 1916.

Vine-pruning in California. L. H. Bailey. Pruning Manual, 18th ed., pp. 346–400; Jan. 1917.

When Are Grapes Ripe? Monthly Bull. Calif. State Comm. of Horticulture, vol. 6, nos. 3 and 4; Apr. 1917.

World Culture of the Olive. Olive Jour., vol. 1, no. 7; Dec. 1916.

IRTCH, F. W., Instructor in Surgery.

Group Study: A Plea for Medical Co-operation in Hospitals. Interstate Medical Jour., vol. 24, no. 1; Jan. 1917.

Some Experiences with Group Study: Clinical Inefficiency in Hospitals and a Suggested Remedy. Calif. State Jour. of Medicine; Sept. 1916.

OAS, G., Instructor in Public Speaking.

Bones and Masters. Texas Rev., vol. 2, pp. 167–71; Oct. 1916.

Gentle Theme Reader. Atlantic Monthly, vol. 119, pp. 715–17; May 1917.

Philosophy and Literature. Univ. Calif. Chronicle, vol. 18; July 1916.

Scientific Wanderlust. Atlantic Monthly, vol. 118, pp. 715–17; Nov. 1916.

OKE, G. H., Professor of Law.

Address on the Institute of Jurisprudence. Delivered before the Association of the Bar, New York City, Dec. 12, 1916; read before the State Bar Association of New York at the Annual Meeting, Jan. 12–13, 1917. Proc. of the New York State Bar Assoc., vol. 15; 1917.

Institute of Jurisprudence. 24 pp.; Wander Press, New York; 1916.

The New Duty Bar in the Development of the Law. Southwestern Univ. Law Rev.; June 1917.

RADLEY, C. B., Professor of Rhetoric, Emeritus.

On Plotting the Inflections of the Voice. Univ. Calif. Publ. Amer. Archaeology and Ethnology, vol. 12, no. 5, pp. 195–218, plates 1–5; Oct. 1916.

Branch, G. E. K., Instructor in Chemistry.
Hydrolysis of Hexahydropyrimidine. Jour. of the Amer. Chemical So vol. 38, pp. 2466–74; Nov. 1916.

Brandegee, T. S., Hon. Curator of Herbarium.
Plantae Mexicanae Purpusianae VIII. Univ. Calif. Publ. Botan vol. 6, pp. 363–75; Mar. 1917.

Bray, W. C., Associate Professor of Chemistry.
Experiments with Nitrogen Trichloride [with C. T. Dowell]. Jour. the Amer. Chemical Soc., vol. 39, pp. 896–905; May 1917.
Reactions Between Chlorine and Ammonia [with C. T. Dowell]. *Ibi* vol. 39, p. 905–12; May 1917.

Brodeur, A. G., Instructor in English Philology.
The Prose Edda (translation). 266 pp.; American-Scandinavian Fou dation, New York; 1916.

Brown, W., Assistant Professor of Psychology.
Correlation Between the Sex of Observers and the Sex of Pictures Re ognized [with Yo Sugisaki]. Jour. of Experimental Psycholog vol. 1, no. 4, p. 351; Aug. 1916.
Individual and Sex Differences in Suggestibility. Univ. Calif. Pub Psychology, vol. 2, no. 6, pp. 291–430; July 1916.

Bruce, D., Assistant Professor of Forestry.
Dollars and Sense. Proc. of the Soc. of Amer. Foresters, vol. 11, p 425–28; Oct. 1916.
Logarithmic Cross Section Paper in Forest Mensuration. Jour. of Fo estry, vol. 14, pp. 335–42; Mar. 1917.

Bruce, H. L., Assistant Professor of English Composition.
English Adaptations of Voltaire's Plays. Modern Language Note vol. 32, pp. 247–48; Apr. 1917.

Bryant, H. C., Economic Ornithologist.
Birds Lose Their Way in Fog. Calif. Fish and Game, vol. 3, p. 89 Apr. 1917.
Columbian Sharp-Tailed Grouse in Northeastern California. *Ibid.*, vol. p. 161; July 1916.
European House Sparrow and Its Control in California. Teachers Bull. no. 7, Calif. Fish and Game Comm., pp. 1–8; June 1916.
F. E. L. Beal and Economic Ornithology in California. Condor, vol. 18 pp. 234–36; Nov.–Dec. 1916.
Habits and Food of the Roadrunner in California. Univ. Calif. Publ Zoology, vol. 17, pp. 21–58; Oct. 26, 1916.
Leopard Frog in California. Calif. Fish and Game, vol. 3, p. 90; Apr 1917.
More Banded Ducks Taken in California. *Ibid.*, vol. 3, p. 88; Apr. 1917

National Forest and Wild Life. Calif. Forestry, vol. 1, pp. 5–7; May 1917.

Peculiar Nesting Site of Ash-Throated Flycatcher [with A. M. Bryant]. Condor, vol. 18, p. 230; Nov.–Dec. 1916.

Pheasants Increase on Yerba Buena Island in San Francisco Bay. Calif. Fish and Game, vol. 2, p. 163; July 1916.

Rabbits Damage Crops in San Diego County. *Ibid.*, vol. 2, pp. 215–18; Oct. 1916.

Report of Bureau of Education Publicity and Research. Twenty-fourth Biennial Report of the Calif. Fish and Game Comm., pp. 101–13; Dec. 1916.

Snowy Owl Again Invades California. Calif. Fish and Game, vol. 3, pp. 37–38; Jan. 1917.

White Mallards. *Ibid.*, vol. 3, p. 89; Apr. 1917.

URNETT, T. C., Assistant Professor of Physiology.

Note on a Toxic Nucleoprotein Obtained from Rat Carcinoma. Proc. of the Soc. for Experimental Biology and Medicine, vol. 14, pp. 63–64; Dec. 1916.

UTTERFIELD, H. M., Assistant in Agricultural Education.

Early Harvest in California. Univ. Calif. Jour. of Agric., vol. 4, pp. 198–99; Feb. 1917.

UWALDA, J. P., Instructor in Geography.

Age of Strata Referred to the Ellensburg Formation in the White Bluffs of the Columbia River [with J. C. Merriam]. Univ. Calif. Publ. Bull. of the Dept. of Geology, vol. 10, no. 15, pp. 255–66; Apr. 1917.

New Mammalian Faunas from Miocene Sediments near Tehachapi Pass in the Southern Sierra Nevada. *Ibid.*, vol. 10, no. 6, pp. 75–85; Nov. 1916.

LKINS, M. W., Lecturer in Philosophy on the Mills Foundation.

Persistent Problems of Philosophy. 4th ed. rev., 566 pp.; Macmillan Co., New York; 1917.

Purposing Self Versus Potent Soul. Jour. of Philosophy, vol. 14, pp. 197–200; Apr. 1917.

MPBELL, W. W., Director of the Lick Observatory.

Comments on the Daylight Saving Problem. Publ. of the Astron. Soc. of the Pacific, vol. 29, p. 260.

Daylight Saving Plan. San Francisco Chronicle; Apr. 15, 1917.

Error in Radial Velocity Observations Arising from Non-Uniform Slit Illumination. Lick Observatory Bull., vol. 9, p. 30.

Four Nebulae with Bright-Line Spectra [with J. H. Moore]. Publ. of the Astron. Soc. of the Pacific, vol. 29, p. 55.

The Nebulae. Presidential Address, American Association for the Advancement of Science. Science, n.s., vol. 45, p. 513.

Note on the Spectral Type and Radial Velocity of Barnard's Pro Motion Star [with J. H. Moore]. Publ. of the Astron. Soc. of Pacific, vol. 28, p. 207.

Note on the Spectrum of the Nebula N.G.C. 7293 [with J. H. Moor *Ibid.,* vol. 29, p. 286.

On Systematic Errors in the Measured Intervals Between Close Lin Lick Observatory Bull., vol. 9, p. 28.

On the Forms of Spectral Lines Observed in the Planetary Neb N.G.C. 7662 and N.G.C. 2392 [with J. H. Moore]. Publ. of t Astron. Soc. of the Pacific, vol. 29, p. 133.

On the Observed Rotations of Planetary Nebulae [with J. H. Moor *Ibid.,* vol. 29, p. 283.

On the Radial Velocities of the Orion Nebula [with J. H. Moor *Ibid.,* vol. 29, p. 143.

On the Radial Velocity of β Ursae Majoris [with A. M. Hobe]. Li Observatory Bull., vol. 9, p. 22.

On the Rotation of the Nebula Jonckheere 320 [with J. H. Moore Publ. of the Astron. Soc. of the Pacific, vol. 29, p. 26.

The Solar System. Adolfo Stahl Lecture. *Ibid.,* vol. 29, p. 222.

Spectrographic Observations of Rotation in the Planetary Nebu N.G.C. 7026 [with J. H. Moore]. *Ibid.,* vol. 29, p. 55.

What We Know About Comets. Presidential Address, First Preside of the Pacific Division of the American Association for the Advanc ment of Science. Scientific Monthly, vol. 3, p. 513.

Catton, J. H., Assistant in Medicine.

Leukopenia, Its Relation to Bronchitis. Calif. State Jour. of Medicin vol. 14, p. 320; Aug. 1916.

Review: Crile. *Kinetic Drive. Ibid.,* vol. 14, p. 463; Nov. 1916.

Review: Krehl. *Basis of Symptoms. Ibid.,* vol. 14, p. 460; Nov. 191

Studies of Spinal Fluid During Iodide Medication. Jour. of the Ame Medical Assoc., vol. 67, pp. 1369–70; Nov. 1916.

Chamberlain, T. G., Teaching Fellow in Political Science.

Constitutional Law. Calif. Law Rev., vol. 5; Mar. 1917.

Deeds. *Ibid.,* vol. 5; May 1917.

Chapman, C. E., Assistant Professor of History.

American Congress of Bibliography and History at Buenos Aires Amer. Historical Rev., vol. 22, no. 1, p. 83; Oct. 1916.

Anent the Founding of a Latin-American Historical Review. *Ibid* vol. 22, no. 1, p. 217; Oct. 1916.

California. (In Spanish) La Mañana, of Buenos Aires, p. 5; July 1916.

A Californian in South America. 59 pp.; Lederer, Street and Zeus Co., Berkeley; 1917.

California's Place in Pan-American Relations. (In Spanish) La Epoca, of Buenos Aires, p. 3; July 1916.

Founding of San Francisco. H. M. Stephens and H. E. Bolton, ed. The Pacific Ocean in History, p. 373; 1917.

Grizzly Bear's History of California. Grizzly Bear, vol. 20, no. 6, p. 22; Apr. 1917.

Latin American Traits. (In Spanish) La República, of La Plata, p. 1; July 1916.

New Light on Father Serra [with C. S. Mitrani]. Grizzly Bear, vol. 20, no. 5, p. 5; Mar. 1917: no. 6, pp. 1–2; Apr. 1917: vol. 21, no. 1, p. 6; May 1917.

Visit with José Toribio Medina. Overland Monthly, vol. 68, no. 6, p. 477; June 1917.

HRISTIE, A. W., Assistant in Agricultural Chemistry.

Banana Stalks as a Source of Potash [with H. E. Billings]. Jour. of Industrial and Engineering Chemistry, vol. 9, pp. 153–54; Feb. 1917.

Boiling Method for the Determination of Water-soluble Arsenic in Lead Arsenate [with G. P. Gray]. *Ibid.*, vol. 8, pp. 1109–13; Dec. 1916.

Utilization of Olive Pomace [with W. V. Cruess]. *Ibid.*, vol. 9, p. 45–47; Jan. 1917.

Same. Olive Jour., vol. 1, no. 8; Jan. 1917.

LARK, B. L., Instructor in Palaeontology.

An Apalachicola Fauna from Lower California (Abstract). Bull. of the Geological Soc. of Amer., vol. 28, no. 1, p. 223–24; Mar. 1917.

Astoria Series (Oligocene) in the Region of Mount Diablo, Middle California (Abstract). *Ibid.*, vol. 28, no. 1, pp. 227–29; Mar. 1917.

LARK, L. D., Instructor in Agricultural Extension.

Agricultural Extension Service and Country Life. Club Woman, p. 6; Apr. 1917.

Farm Home Management. Univ. Calif. Jour. of Agric., vol. 4, p. 124; Dec. 1916.

LAUSEN, R. E., Assistant Professor of Genetics.

Mendelian Factor Differences Versus Reaction System Contrasts in Heredity [with T. H. Goodspeed]. Amer. Naturalist, vol. 51, pp. 31–101; Feb. 1917.

Nature of the F_1 Species Hybrids between Nicotiana Sylvestris and Varieties of Nicotiana Tabacum with Special Reference to the Conception of Reaction System Contrasts in Heredity [with T. H. Goodspeed]. Univ. Calif. Publ. Botany, vol. 5, pp. 301–46; Jan. 1917.

LEVELAND, M., Director of the Women's Gymnasium and Assistant Professor of Physical Education.

State-wide Physical Education Legislation in California. Amer. Physical Education Rev.; June 1917.

Coit, J. E., Professor of Citriculture.

Breeding up Lemons. Calif. Cultivator; Sept. 1916.

Buds for Citrus Trees. *Ibid.;* Oct. 1916.

Cause of June Drop of Navel Oranges [with R. W. Hodgson]. Un Calif. Jour. of Agric., vol. 4, no. 1; Sept. 1916.

Natural vs. Arbitrary Standards of Quality for Oranges. Calif. Cul vator; Nov. 1916.

Navel Persimmons. Calif. Citrograph; Dec. 1916.

New and Successful Method of Rooting Date Palm Offshoots. Un Calif. Jour. of Agric., vol. 4, no. 2; Oct. 1916.

Olive Culture in Arizona and the Future Possibilities of that Regio Olive Jour., vol. 1, no. 5; Oct. 1916.

Problems and Opportunities in the Fig Industry. Address before t Fig Growers' Conference at Fresno, Jan. 13, 1917. Calif. Cult vator; Jan. 1917.

Recorded Trees vs. Pedigreed Trees. *Ibid.*, Jan. 1917.

Shall I Equip with Heaters? *Ibid.;* Dec. 1916.

Spraying for June Drop of Navels. *Ibid.*, p. 124; Feb. 1917.

Colby, W. E., Lecturer on Law of Mines and Water.

Extralateral Right: Shall it be Abolished? Calif. Law Rev., vol. 4, no. pp. 361–88; July 1916: vol. 4, no. 6, pp. 437–64; Sept. 1916: vol. no. 1, pp. 18–36; Nov. 1916: vol. 5, no. 4, pp. 303–30; May 1917.

Coleman, G. A., Instructor in Entomology and Curator of the Agricultura Museum.

Bee Keepers' Opportunity. Pacific Rural Press; Apr. 28, 1917.

Bees and Bee-keeping (Scenario). Western Honey Bee, vol. 5, no. 2 pp. 41–44; Feb. 1917.

Brief Discussion of the Different Bee Diseases and Their More Easil Recognized Symptoms. San Diego Co. Farm Bureau Monthly Aug. 31, 1916.

Development of the Motion Picture and Its Place in Educational Work. Jour. of Economic Entomology, vol. 10, pp. 371–73; June 1917.

Suggested Code of Ethics for Bee Keepers. San Diego Co. Farm Bureau Monthly; Aug. 31, 1916.

Condit, I. J., Assistant Professor of Citriculture.

History of the Avocado and Its Varieties in California, with a Check List of All Named Varieties. Annual Report of the Calif. Avocado Assoc., 1916, pp. 105–23; Mar. 1917.

Same. Monthly Bull. of the Calif. State Comm. of Horticulture, vol. 6, pp. 1–21; Jan. 1917.

Japanese Persimmon in California. Univ. Calif. Jour. of Agric., vol. 4, p. 154; Jan. 1917.

Kadota Fig. Proc. of the Fig Institute, Fresno, Cal., pp. 84–87; Jan. 1917.

Same. The Joaquin, vol. 1, p. 11; Feb. 1917.

Notes on the Avocado. Calif. Citrograph, vol. 2, p. 5; Sept. 1916.

Smyrna Figs and Caprification. Calif. Cultivator, vol. 48, p. 588; May 26, 1917.

ORNER, G. W., Assistant Professor of Anatomy.

Oestrus and Ovulation in Swine [with A. E. Amsbaugh]. Anatomical Record, vol. 12, pp. 287–91; Mar. 1917.

On the Lipoidal Nature of Structures in the Corpus Luteum Cells of Swine. Proc. of the Amer. Assoc. of Anatomists, Anatomical Record, vol. 11, pp. 344–45; Jan. 1917.

Variation of the Amount of Phosphatides in the Corpeus Luteum of the Sow during Pregnancy. Jour. of Biological Chemistry, vol. 29, pp. 141–43; Feb. 1917.

ORNISH, Mrs. B. Q., Assistant in Spanish.

Ancestry and Family of Juan de Oñate. H. M. Stephens and H. E. Bolton, ed. The Pacific Ocean in History, pp. 452–64; 1917.

ORY, H. E., Assistant Professor of English.

An Aristocratic Voice in the Wilderness. Dial, vol. 61, no. 721, pp. 16–21; June 22, 1916.

Senility of the Short Story. *Ibid.*, vol. 62, no. 741, pp. 379–81; May 3, 1917.

Sentimental Aristocracy. *Ibid.*, vol. 60, no. 720, pp. 541–46; June 8, 1916.

RAWFORD, R. T., Associate Professor of Practical Astronomy.

Comet b 1916 (Wolf) [with D. Alter]. Publ. of the Astron. Soc. of the Pacific, vol. 28, pp. 202–06; Aug.–Oct. 1916.

Comet b 1916 (Wolf). *Ibid.*, vol. 29, pp. 147–48; June 1917.

Ephemeris of Comet b 1916 (Wolf). Lick Observatory Bull., vol. 9, pp. 35–36; Oct. 1916: vol. 9, pp. 48–49; Feb. 1917.

Second Elements and Ephemeris of Comet b (Wolf) [with D. Alter]. *Ibid.*, vol. 9, pp. 74–77; May 1917.

ROSS, I. B., Assistant Professor of Economics.

Acceptances. Coast Banker, vol. 16, p. 514; June 1916.

Australasian Situation. *Ibid.*, vol. 17, p. 177; Aug. 1916.

Branch Banking Opposed. *Ibid.*, vol. 17, p. 9; July 1916.

Check Collection System. *Ibid.*, vol. 17, p. 10; July 1916.

Interlocking Directorates. *Ibid.*, vol. 17, p. 9; July 1916.

London Control of Money Market. *Ibid.*, vol. 17, p. 118; Aug. 1916.

New Economics Needed. *Ibid.*, vol. 17, pp. 205–06; Sept. 1916.

Reserve Notes as Reserve. *Ibid.*, vol. 17, p. 380; Nov. 1916.

Suggested Revision. *Ibid.*, vol. 17, p. 115; Aug. 1916.

Uniform Banking Laws. *Ibid.*, vol. 17, pp. 380–81; Nov. 1916.
Will We Lose Our Gold? *Ibid.*, vol. 17, pp. 290–91; Oct. 1916.
Work of Last Congress. *Ibid.*, vol. 17, pp. 202–03; Sept. 1916.

Cruess, W. V., Assistant Professor of Zymology.
Avocado By-products [with S. K. Mitra]. Annual Report of the Cal Avocado Assoc., 1916, pp. 16–20; Mar. 1917.
Balling Degree of Fruit Juices. Monthly Bull. of the Calif. Sta Comm. of Horticulture, pp. 286–90; Aug. 1916.
Candied and Glacé Fruits. Pacific Rural Press; July 8, 1916.
Canning and Preserving of Figs. Proc. of the Fig Institute, Fresn Cal., pp. 103–11; Jan. 1916.
Canning without Sugar [with F. T. Bioletti]. Univ. Calif. Agric. Ex Sta.; May 1917.
Drying Winter Vegetables [with F. T. Bioletti]. Univ. Calif. Agri Exp. Sta.; May 1917.
Experiments on the Formation of High Amounts of Alcohol withou Fortification. Amer. Wine Press; Mar. 1917.
Grape Juice Recipe. Pacific Rural Press, p. 340; Sept. 23, 1916.
Home and Farm Canning of Fruits and Vegetables. Univ. Calif. Agri Exp. Sta. Circ. no. 158; Dec. 1916.
New Method of Canning Vegetables. Pacific Rural Press, p. 101 July 29, 1916.
New Process of Pickling Olives. *Ibid.*, p. 74; Jan. 1917.
Preliminary Observations on the Ripening of Pears [with P. M. Stone] Monthly Bull. of the Calif. State Comm. of Horticulture, pp. 425–29; Dec. 1916.
Preservation of Vegetables without Canning. Calif. Cultivator, p. 534; May 12, 1917.
Same. Pacific Rural Press, p. 612; May 12, 1917.
Preservation of Eggs [with F. T. Bioletti]. Univ. Calif. Agric. Exp. Sta.; June 1917.
Preservation of Vegetables by Salting or Fermentation [with F. T. Bioletti]. Univ. Calif. Agric. Exp. Sta.; June 1917.
Saving More Oil in the Manufacturing Process. Olive Jour., vol. 1, p. 15; 1916.
Sweet Wines of High Alcohol Content without Fortification. Jour. of Industrial and Engineering Chemistry, vol. 8, pp. 1124–26; Dec. 1916.
Utilization of Olive Pomace [with A. W. Christie]. *Ibid.*, vol. 9, pp. 45–47; Jan. 1917.
Same. Olive Jour., p. 4, 8–9; Jan. 1917.

Cumming, J. G., Assistant Clinical Professor of Preventive Medicine and Hygiene.
Control of Hookworm Infection in the Deep Gold Mines of California. U. S. Dept. of the Interior, Bureau of Mines; Feb. 1917.

Epidemic Resulting from the Contamination of Ice Cream by a Typhoid Carrier. Jour. of the Amer. Medical Assoc., vol. 68, pp. 1163–65; Apr. 1917.

Typhus Fever in California. Calif. State Jour. of Medicine; May 1917.

URTIS, H. D., Astronomer at the Lick Observatory.

The Nebulae. Publ. of the Astron. Soc. of the Pacific, vol. 29, pp. 91–103; Apr. 1917.

Note on the Planetary Nebulae. *Ibid.*, vol. 29, pp. 52–54; Feb. 1917.

On the Reliability of Parallax Determinations (Abstract). *Ibid.*, vol. 29, pp. 61–62; Apr. 1917.

Space, Time, and Gravitation (Abstract). *Ibid.*, vol. 29, pp. 63–64; Apr. 1917.

ANIEL, J. F., Assistant Professor of Zoology.

Anatomy of Heptanchus Maculatus; the Endo-Skeleton. Univ. Calif. Publ. Zoology, vol. 16, pp. 349–70; Dec. 1916.

AVIDSON, J. B., Professor of Agricultural Engineering.

Better Farm Buildings. Univ. Calif. Jour. of Agric., vol. 4, pp. 221–38; Mar. 1917.

Tractor Management. *Ibid.*, vol. 4, pp. 155–70; Jan. 1917.

Wooden Silos Will Solve the Problem of Wintering Cattle. Univ. Calif. Farm Agricola, vol. 2, no. 29, p. 2; Apr. 27, 1917.

AVIS, E. F., Instructor in Mineralogy and Geology.

Registration of Earthquakes at the Berkeley Station and at the Lick Observatory Station from October 1, 1915, to March 31, 1916. Univ. Calif. Seismographic Sta. Bull., vol. 1, no. 11, pp. 213–42; Nov. 1916.

Same. From April 1, 1916, to September 30, 1916. *Ibid.*, vol. 1, no. 12, pp. 243–71; Apr. 1917.

AVIS, I. F., Assistant in Agricultural Extension.

Feeding the Dairy Cow for Butter Fat Production. Calif. Cultivator, vol. 47, p. 473; Nov. 11, 1916.

E ONG, E. R., Assistant in Entomology.

Municipal Control of the Argentine Ant. Jour. of Economic Entomology, vol. 9, no. 5.

EUTSCH, M. E., Assistant Professor of Latin.

Caesar's First Wife. Classical Philology, vol. 12, pp. 93–96; Jan. 1917.

Concerning Caesar's Appearance. Classical Jour., vol. 12, pp. 247–53; Jan. 1917.

Where the Fastenings Are Weakest. Proc. of the Calif. High School Teachers' Assoc., 1916, Sierra Educational News, vol. 12, pp. 78–86; Aug. 1916.

Dixon, J., Assistant Curator of Mammals, California Museum of Vert brate Zoology.

Migration of the Yellow-Billed Loon. Auk, vol. 33, no. 4, pp. 370–7 Oct. 1916.

Timber Wolf in California. Calif. Fish and Game, vol. 2, no. 3, pp. 12 28; July 1916.

Dougherty, J. E., Associate Professor of Poultry Husbandry.

Feeding Poultry. F. W. Woll. Productive Feeding of Farm Animal pp. 336–58; Oct. 1916.

How to Operate an Incubator. Univ. Calif. Agric. Exp. Sta. Cir no. 156; Oct. 1916.

Dougherty, P. I., Assistant in Agricultural Extension.

Farm Adviser Job No Idle Dream. Univ. Calif. Jour. of Agric., vol. p. 250; Apr. 1917.

Easton, E. J., Assistant in Mathematics.

Elements and Ephemeris of Comet a 1917 (Mellish) [with H. M Jeffers]. Lick Observatory Bull. no. 290, p. 2; Apr. 1917.

Ehrlich, L., Lecturer in Political Science.

Modern Poland. Univ. Calif. Chronicle, vol. 19, no. 2, p. 173; Apr. 1917

Einarsson, S., Instructor in Practical Astronomy.

Elements and Ephemeris of Comet b 1917 (Schaumasse). Harvard Coll Observatory Bull., p. 637; May 5, 1917.

Elliott, E., Professor of International Law and Politics.

Report of the Committee on the Treaty Power. Trans. of the Commonwealth Club of California, vol. 11, pp. 559–80; Dec. 1916.

Emge, L. A., Assistant in Obstetrics and Gynecology.

Acidosis in Normal Uterine Pregnancy. Amer. Jour. of Obstetrics and Diseases of Women and Children, vol. 74, no. 5, pp. 1–8; Nov. 1916.

Essenberg, Mrs. C. E., Librarian and Zoologist, Scripps Institution for Biological Research.

On Some New Species of Aphroditidae from the Coast of California. Univ. Calif. Publ. Zoology, vol. 16, pp. 401–30; Mar. 1917.

Essig, E. O., Assistant Professor of Entomology.

Chrysanthemum Gall-Fly. Jour. of Economic Entomology, vol. 9, pp. 461–68; Oct. 1916.

Coccid-feeding Moth. *Ibid.*, vol. 9, pp. 369–70; June 1916.

Dr. Albert John Cook. Pomona College Quarterly Mag., vol. 5, pp. 13–15; Oct. 1916.

Genus Vanessa in California. Jour. of Entomology and Zoology, vol. 8, pp. 97–111; Sept. 1916.

Two Newly Established Scale Insects. Monthly Bull. of the Calif. State Comm. of Horticulture, vol. 5, pp. 192–97; May 1916.

STERLY, C. O., Zoologist in the Scripps Institution for Biological Research.

Occurrence of a Rhythm in the Goetropism of Two Species of Plankton Copepods when Certain Recurring External Conditions Are Absent. Univ. Calif. Publ. Zoology, vol. 16, pp. 393–400; Mar. 1917.

Specificity in Behavior and the Relation between Habits in Nature and Reactions in the Laboratory. *Ibid.*, vol. 16, pp. 381–92; Mar. 1917.

VANS, H. M., Professor of Anatomy.

Human Embryo of Seven to Eight Somites [with G. W. Bartelmez]. Anatomical Record, vol. 11, pp. 355–56; Jan. 1917.

AY, P. B., Assistant Professor of Romanic Philology.

''Sous Verdun.'' Nation, vol. 103, p. 131; Aug. 10, 1916.

LEISCHNER, E. C., Voluntary Assistant in Pediatrics.

Immediate Tonsillectomy in Incipient Acute Endo-Carditis of Tonsillar Origin. Archives of Pediatrics, vol. 34, no. 2; Feb. 1917.

Value of Tuberculin in Eliminating Tuberculosis from Certified Herds. Proc. of the Amer. Assoc. of Medical Milk Commissions; 1916.

LOSSFEDER, F. C. H., Instructor in Viticulture and Superintendent of Grounds, Univ. Farm.

Sweet Wines of High Alcohol Content without Fortification. Jour. of Industrial and Engineering Chemistry, vol. 8, no. 12, p. 1124; Dec. 1916.

OOTE, F. S., Jr., Associate Professor of Railroad Engineering.

Logarithmic Stadia Reduction Table. Univ. Calif. Publ. Engineering, vol. 1, pp. 281–92; Feb. 1917.

ORCE, J. N., Assistant Professor of Epidemiology.

Further Studies on Typhoidin [with I. M. Stevens]. Archives of Internal Medicine, vol. 11, pp. 440–56; Mar. 1917.

Modern Ventilation Standards for Schools [with M. I. Beattie]. Monthly Bull. of the Calif. State Board of Health, vol. 12, pp. 191–94; Apr. 1917.

Some Factors Alleged to Influence the Duration and Severity of Vaccinia [with I. M. Stevens]. Jour. of the Amer. Medical Assoc., vol. 68, pp. 1247–50; Apr. 1917.

Teacher's Part in the Control of Communicable Diseases of School Children. Proc. of the Eighth Congress of the Amer. School Hygiene Assoc., June 1915, vol. 5, pp. 49–53; 1916.

RKE, A., Agassiz Professor of Oriental Languages and Literature.

Philosophy (Chinese). Hastings. Encyclopaedia of Religion and Ethics, vol. 9, pp. 853–57; 1917.

EEBORN, S. B., Instructor in Entomology.

Lungworms of Domesticated Animals with the Method of Chloroform Treatment [with W. B. Herms]. Report of the Calif. State Veterinary Assoc., pp. 6–9; Sept. 1916.

Pulmonary Strongylosis [with W. B. Herms]. Jour. of the Am Veterinary Medical Assoc., n.s., vol. 3, pp. 862–68; Mar. 1917.

Rice, Mosquitoes, and Malaria. Monthly Bull. of the Calif. State Boa of Health, vol. 12, pp. 247–53; Nov. 1916.

Frost, H. B., Instructor in Plant Breeding in the Citrus Experiment St tion and Graduate School of Tropical Agriculture.

Different Meanings of the Term ''Factor'' as Affecting Clearness Genetic Discussion. Amer. Naturalist, vol. 51, pp. 244–50; Apr. 191

Mutation in Matthiola Annua, a ''Mendelizing'' Species. Amer. Jou of Botany, vol. 7, pp. 377–83; July 1916.

Gardner, N. L., Assistant Professor of Botany.

New Pacific Coast Marine Algae I. Univ. Calif. Publ. Botany; Ma 1917.

Gay, F. P., Professor of Pathology and Bacteriology.

Investigation of Infectious Diseases. Jour. of the Amer. Medic Assoc., vol. 67, pp. 1263–65; Oct. 28, 1916.

Specialization and Research in Science. Science, n.s., vol. 45, pp. 25–33 Jan. 12, 1917.

Typhoidin Test in Nurses. Jour. of Laboratory and Clinical Medicin vol. 2, pp. 217–21; Jan. 1917.

Gericke, W. F., Assistant Professor of Soil Chemistry.

Experiments on the Effects of Constituents of Solid Smelter Wastes o Barley Growth in Pot Cultures [with C. B. Lipman]. Univ. Calif Publ. Agric. Sciences, vol. 1, pp. 495–587, Mar. 1917.

Nitrate Determinations in the Presence of Chlorides. Jour. of Industrial and Engineering Chemistry, vol. 9, pp. 585–86; June 1917.

Some Effects of Salt-treated Soils on Absorption by Seeds. Soil Science vol. 3, pp. 271–78; Mar. 1917.

Vegetation Experiment on the Availability of Nitrogenous Fertilizers in an Arid Soil [with C. B. Lipman]. *Ibid.*, vol. 2, pp. 575–81; Dec. 1916.

Gibson, G. E., Instructor in Chemistry.

Text Book of Thermo-Chemistry and Thermodynamics by Otto Sackur, trans. and rev. by G. E. Gibson. 439 pp.; London, Macmillan; 1917.

Gifford, E. W., Associate Curator of the Anthropological Museum.

Miwok Myths. Univ. Calif. Publ. Amer. Archaeology and Ethnology, vol. 12, 56 pp.; May 1917.

Tubatulabal and Kawaiisu Kinship Terms. *Ibid.*, vol. 12, 30 pp.; Feb. 1917.

Girard, W., Instructor in French.

Du transcendantalisme considéré essentiellement dans sa définition et ses origines françaises. Première et seconde parties. Univ. Calif. Publ. Modern Philology, vol. 4, pp. 351–498; Oct. 1916.

OGGIO, E., Instructor in Italian.

Due commedie moderne, ed. with notes and vocabulary. Boston, Ginn; 1916.

Modern Italian Novels and Novelists. Modern Language Bulletin, vol. 3, pp. 2–5; Mar. 1917.

Per lo studio dell' Italiano in America. Il Carroccio, vol. 5, pp. 18–19; Jan. 1917.

OODSPEED, T. H., Assistant Professor of Botany.

Mendelian Factor Differences versus Reaction System Contrasts in Heredity [with R. E. Clausen]. Amer. Naturalist, vol. 5, no. 1, pp. 32–46, 92–101; Jan. and Feb. 1917.

Nature of the F_1 Species Hybrids between Nicotiana Sylvestris and Varieties of Nicotiana Tabacum with Special Reference to the Conception of Reaction System Contrasts in Heredity [with R. E. Clausen]. Univ. Calif. Publ. Botany, vol. 5, no. 11, pp. 301–46; Jan. 1917.

Notes on the Californian Species of Trillium L.

I. Report of the General Results of Field and Garden Studies, 1911–1916 [with R. P. Brandt]. *Ibid.*, vol. 7, no. 1, pp. 1–24; Oct. 1916.

II. Nature and Occurrence of Undeveloped Flowers [with R. P. Brandt]. *Ibid.*, vol. 7, no. 2, pp. 25–38; Oct. 1916.

IV. Teratilogical Variations of Trillium Sessile Var. Giganteum H. & A. *Ibid.*, vol. 7, no. 4, pp. 69–100; Jan. 1917.

On the Partial Sterility of Nicotiana Hybrids Made with N. Sylvestris as a Parent. II. [With A. H. Ayres]. *Ibid.*, vol. 5, no. 9, pp. 273–92; Oct. 1916.

On the Partial Sterility of Nicotiana Hybrids Made with N. Sylvestris as a Parent. III. Account of the Mode of Floral Abscission in the F_1 Species Hybrids [with J. N. Kendall]. *Ibid.*, vol. 5, no. 10, pp. 293–99; Nov. 1916.

OULD, H. N., Instructor in Zoology.

Studies on Sex in the Hermaphrodite Mollusc Crepidula Plana. I. History of the Sexual Cycle. Jour. of Experimental Zoology, vol. 23, pp. 1–69; May 1917.

RAY, G. P., Instructor in Insecticides and Chemist in Insecticide Laboratory.

Boiling Method for the Determination of Water-soluble Arsenic in Lead Arsenate [with A. W. Christie]. Jour. of Industrial and Engineering Chemistry, vol. 8, pp. 1109–13; Dec. 1916.

EGG, J. W., Professor of Landscape Gardening and Floriculture.

Landscape Improvement of Rural School Grounds. Calif. State Board of Education, Bull. No. 20; Mar. 1917.

Vines for California. L. H. Bailey. Standard Cyclopedia of Horticulture, vol. 5, pp. 2705–06; July, 1916.

GRINNELL, J., Assistant Professor of Zoology and Director of the California Museum of Vertebrate Zoology.

Animal Life as an Asset of National Parks [with T. I. Storer] Science, n.s., vol. 44, pp. 375–80; Sept. 15, 1916.

California Lowland Mink a Distinct Race. Proc. of the Biologica Soc., Washington, vol. 29, pp. 213–14; Sept. 22, 1916.

Diagram for Illustrating the Seasonal Shifting of the Bird Calendar Condor, vol. 19, p. 68; Mar. 1917.

Field Tests of Theories Concerning Distributional Control. Amer Naturalist, vol. 51, pp. 115–28; Feb. 1917.

Invasion of California by the Eastern Goshawk. Condor, vol. 19, pp. 70–71; Mar. 1917.

New Ruffled Grouse from the Yukon Valley. *Ibid.*, vol. 18, pp. 166–67; July 20, 1916.

Recent Ornithology from Alaska and Eastern Siberia. *Ibid.*, vol. 18, pp. 236–37; Nov. 1916.

Subspecies of *Hesperiphona Vespertina*. *Ibid.*, vol. 19, pp. 17–22, fig. 5; Jan. 1917.

Yosemite Cony: a Chapter in the Natural History of the Yosemite National Park. Sierra Club Bull., vol. 10, pp. 159–64, pl. 161; Feb. 21, 1917.

GURLEY, J. E., Instructor in Dental Chemistry.

Monthly editorials in the Jour. of the Calif. State Dental Assoc.; 1916–1917.

HACKETT, C. W., Assistant in History.

Causes for the Failure of Otermín's Attempt to Reconquer New Mexico, 1681–82. H. M. Stephens and H. E. Bolton, ed. The Pacific Ocean in History, pp. 451–63; 1917.

Review: Benavides. *Memorial of 1630* (Ayer translation and edition). Amer. Historical Rev., vol. 22, pp. 661–63; Apr. 1917.

HALL, H. M., Associate Professor of Economic Botany and Assistant Botanist to the Agricultural Experiment Station.

Callistemon. L. H. Bailey. Standard Cyclopedia of Horticulture, vol. 6, p. 3566; 1917.

Pittosporum. *Ibid.*, vol. 5, pp. 2653–55; 1916.

Relation of Farm Weeds to Hay Fever. Monthly Bull. of the Calif. State Comm. of Horticulture, vol. 6, pp. 44–47; Feb. 1917.

Sequoia. L. H. Bailey. Standard Cyclopedia of Horticulture, vol. 6, pp. 3153–54; 1917.

Iall, I. C., Assistant Professor of Bacteriology.

Abstract: Smith. *Studies on the Crown Gall of Plants; Its Relation to Human Cancer.* Jour. of Bacteriology, vol. 1, no. 5, p. 231; 1916.

Review: Kendall. *Bacteriology, General, Pathological, and Intestinal.* Abstracts of Bacteriology, vol. 1, no. 1, p. 131; Feb. 1917.

Testicular Infusion Agar; a Sterilizable Culture Medium for the Gonococcus. Jour. of Bacteriology, vol. 1, no. 3, p. 343; 1916.

Iarding, S. T., Assistant Professor of Irrigation.

Agricultural Uses of Power. Jour. of Electricity, vol. 37, p. 1–4; 1916.

Electric Power for Irrigation Pumping. *Ibid.*, vol. 37, pp. 29–31, 46–48, 82–83, 103–06, 143–44, 155–56, 182–83, 202–03, 219–21, 261–63, 279–80; 1916: vol. 38, pp. 11–12, 44–45, 121–22, 202–03, 249–50, 351, 395; 1917.

Iaring, C. M., Professor of Veterinary Science.

Bovine Tuberculosis. Univ. Calif. Agric. Exp. Sta. Circ. no. 155, 19 pp.; Sept. 1916.

Occurrence and Importance of Abortion and Sterility in California Cattle. Amer. Veterinary Medical Assoc., vol. 3, no. 7, pp. 928–30; Mar. 1917.

Iart, W. M., Associate Professor of English Philology.

English Popular Ballads. Ed. with introduction, notes, and glossary. 370 pp.; Chicago, Scott, Foresman and Co.,; 1916.

Shakespeare the Writer. Address read at the Celebration of the Shakespeare Tercentenary, University of California, April 2, 1916. Univ. Calif. Chronicle, vol. 18, pp. 363–72; July 1916.

A Vanishing Type. President's Address, Philological Association of the Pacific Coast, Dec. 1916. *Ibid.*, vol. 19, pp. 1–14; Jan. 1917.

arvey, R. W., Instructor in Neurology.

Notes on Two Cases of Anomalous Right Subclavian Artery. Anatomical Record, vol. 12, no. 2, pp. 329–30; Mar. 1917.

ayes, C. J. H., Acting Professor of History.

Arthur James Balfour. Warner's Encyclopedia of the World's Literature, ed. 2.

Elementary College Course in History. History Teachers' Magazine, vol. 8, pp. 125–26; Apr. 1917.

Peace of the Nations. Columbia Univ. Quarterly, vol. 19, pp. 163–82; Mar. 1917.

Political and Social History of Modern Europe. 2 vols.; New York, Macmillan Co., 1916; reprinted 1917.

Review: Rose. *Nationality in Modern History.* Political Science Quarterly, vol. 31, pp. 605–09; Dec. 1916.

Syllabus of Modern History, with Map Studies. 99 pp.; New York, Columbia Univ. Press.; 1916.

War of the Nations, Part III, Year 1916. International Year Book 1916, pp. 776–811; May 1917.

Which? Armed Neutrality or War? Survey, vol. 37, pp. 535–38 Feb. 10, 1917. Widely reprinted in the New York Evening Pos and newspapers throughout the country and in the Congressiona Record.

Hendrickson, A. H., Assistant Professor of Pomology.

Common Honey Bee as an Agent in Prune Pollination. Univ. Calif. Agric. Exp. Sta. Bull. no. 274, 8 pp.; Dec. 1916.

Plums and Prunes. Proc. of the Thirty-fourth Biennial Session of the Amer. Pomological Soc., pp. 102–05; 1916.

Small Fruit Culture in California. Univ. Calif. Agric. Exp. Sta. Circ. no. 164, 24 pp.; Apr. 1917.

Hendry, G. W., Assistant Professor of Agronomy.

Coast versus Valley Seed of Red Oats. Pacific Rural Press, vol. 92, no. 24, pp. 633–42; Dec. 1916.

Methods of Grain Farming. Fresno Republican, vol. 50, no. 58, p. 23; Aug. 1916.

Review: Carlton. *Small Grains.* Univ. Calif. Jour. of Agric., vol. 4, no. 4, pp. 138–41; Dec. 1916.

Rust in Wheat. Fresno Republican, vol. 50, no. 135, p. 29; Nov. 1916.

Semi-annual Cropping System for Bean Lands. Univ. Calif. Jour. of Agric., vol. 4, no. 6, pp. 181–82; Feb. 1917.

Sorghum Family. Los Angeles Times, vol. 10, no. 26, p. 825; Dec. 1916.

Herms, W. B., Associate Professor of Parasitology.

Are We Approaching the Ideals of Lincoln? Pacific Methodist Advocate, vol. 44, pp. 3–4; Apr. 1917.

Challenge of the Hilltops. *Ibid.*, vol. 43, pp. 4–5; Oct. 1916.

Flies, Their Habits and Control. Spec. Bull. no. 20 of the Calif. State Board of Health, 19 pp.; Dec. 1916.

Lungworms Affecting Domesticated Animals in California and the Chloroform Method of Treatment [with S. B. Freeborn]. Report of the Quarterly Meeting of the Calif. State Veterinary Medical Assoc., pp. 6–9; Sept. 1916.

Malaria and Mosquito Control. Spec. Bull. no. 9 of the Calif. State Board of Health, ed. 2, rev., 20 pp.; Dec. 1916.

Malaria-Mosquito Survey of the State. Univ. Calif. Jour. of Agric., vol. 4, p. 42; Oct. 1916.

Progress Report on Statewide Mosquito Survey. Monthly Bull. of the Calif. State Board of Health, vol. 12, pp. 192–96; Oct. 1916.

Pulmonary Strongylosis [with S. B. Freeborn]. Jour. of the Amer. Veterinary Medical Assoc., vol. 50, pp. 862–68; Mar. 1917.

Statewide Malaria-Mosquito Survey of California. Jour. of Economic Entomology, vol. 10; June 1917.

Hersam, E. A., Associate Professor of Metallurgy.

Flotation and Cyanidation. Metallurgical and Chemical Engineering, vol. 14, pp. 675–76; June 1916.

Hibbard, P. L., Chemist in Fertilizer Control.

Commercial Fertilizers. Univ. Calif. Agric. Exp. Sta. Bull. no. 272, pp. 47–99; Oct. 1916.

Study of Determination of Potash. Jour. of Industrial and Engineering Chemistry, vol. 9, pp. 504–13; May 1917.

Hildebrand, J. H., Associate Professor of Chemistry.

Principles Underlying Flotation. Mining and Scientific Press; July 29, 1916.

Review: Centnerzwer. *Cours de manipulatons de chimie physique.* Jour. of the Amer. Chemical Soc., vol. 39, p. 329; Feb. 1917.

Review. Firth. *Practical Physcal Chemistry. Ibid.*, vol. 39, pp. 328–29; Feb. 1917.

Solubility. *Ibid.*, vol. 38, pp. 1452–73; Aug. 1916.

Ioag, C. L., Assistant in Surgery; Instructor in Physiology.

Application of Anoci-Association to Obstetrics. Jour. of Surgery, Gynaecology, and Obstetrics, vol. 23, pp. 612–14; Nov. 1916.

Revolving Operating Room. Modern Hospital, vol. 7, p. 264; Sept. 1916.

Ioagland, D. R., Assistant Professor of Agricultural Chemistry.

Acidity and Adsorption in Soils as Measured by Hydrogen Electrode [with L. J. Sharp]. Jour. of Agric. Research, vol. 8, no. 3, pp. 123–45; Oct. 1916.

Iodgson, R. W., Instructor in Citriculture.

Cause of June Drop of Navel Oranges [with J. E. Coit]. Univ. Calif. Jour. of Agric., vol. 4, pp. 8–10, 27–29; Sept. 1916.

Citrus Blast: a New Bacterial Disease. Monthly Bull. of the Calif. State Comm. of Horticulture, vol. 6, no. 7; June 1917.

Observations on Citrus Blast, a New Disease in California. Calif. Citrograph, vol. 2, pp. 2–3; Dec. 1916.

Pomegranate. Univ. Calif. Agric. Exp. Sta. Bull. no. 276, pp. 163–92; Jan. 1917.

Pruning the Washington Navel Orange. Univ. Calif. Jour. of Agric., vol. 4, pp. 38–40; Oct. 1916.

Recent Fig Institute at Fresno. *Ibid.*, vol. 4, p. 193; Feb. 1917.

Types of Washington Navel. Calif. Cultivator, vol. 47; pp. 29–30; July 1916.

HOLDEN, F. H., Assistant Curator of Osteology, California Museum of Vertebrate Zoology.

Osteological Relationships of Three Species of Beavers. Univ. Calif. Publ. Zoology, vol. 17, no. 8, pp. 75–114; Mar. 3, 1917.

HOLMES, A. R., Research Assistant in Dental Pathology.

Report on Sterilizing Solution. Bull. of the Calif. State Dental Assoc., vol. 2, pp. 31–33; Feb. 1917.

HOLMES, S. J., Professor of Zoology.

Development of Pieces of Diemyctylus Embryos. Proc. of the Soc. for Experimental Biology and Medicine, vol. 14, pp. 103–04; Feb. 1917.

Studies in Animal Behavior. 266 pp.; Boston, R. G. Badger; 1917.

HOOPER, C. W., Instructor in Research Medicine.

Bile Pigment Metabolism:

III. Bile Pigment Output and Blood Feeding [with G. H. Whipple]. Amer. Jour. of Physiology, vol. 42, pp. 256–63; Jan. 1917.

IV. Influence of Fresh Bile Feeding upon Whole Bile and Bile and Bile Pigment Secretion [with G. H. Whipple]. *Ibid.*, vol. 42, pp. 264–79; Jan. 1917.

V. Influence of Bile Constituents on Bile Pigment Secretion, Taurocholic, Glycocholic, and Cholic Acids and Bile Fat. *Ibid.*, vol. 42, pp. 280–89; Jan. 1917.

VI. Bile Pigment Output Influenced by the Eck Fistula [with G. H. Whipple]. *Ibid.*, vol. 42, pp. 544–57; Mar. 1917.

VII. Bile Pigment Output Influenced by Hemoglobin Injections, Anemia, and Blood Regeneration [with G. H. Whipple]. *Ibid.*, vol. 43, pp. 258–74; May 1917.

VIII. Bile Pigment Output Influenced by Hemoglobin Injection: Splenectomy and Anemia [with G. H. Whipple]. *Ibid.*, vol. 43, pp. 275–89; May 1917.

IX. Bile Pigment Output Influenced by Hemoglobin Injection in the Combined Eck-Bile Fistula Dog. *Ibid.*, vol. 43, pp. 290–97; May 1917.

HOWARD, W. L., Associate Professor of Pomology.

Experimental Study of the Rest Period in Plants: Physiological Changes Accompanying Breaking of the Rest Period. Missouri Agric. Exp. Sta. Research Bull. no. 21; 1916.

Experimental Study of the Rest Period in Plants: Seeds. *Ibid.*, no. 17; 1916.

Research and Experimentation; Part 2 of Special Committee Report. Thirteenth Annual Report of the Amer. Soc. for Horticultural Science, pp. 113–16; Mar. 1917.

WERTH, I. W., Professor of Education and Director of University Extension.

Aim in Education. Educational Rev., vol. 53, no. 1, pp. 61–71; Jan. 1917.

Berkeley Golden Jubilee Address. Univ. Calif. Chronicle, vol. 18, pp. 505–19; Oct. 1916.

Buy a Home. Oakland Tribune; Apr. 1, 1917.

Military Training in Our Schools. The Star, vol. 65, no. 4, p. 21; Apr. 1917.

Motivation of School Work. Sierra Educational News, vol. 12, no. 11, pp. 617–18; Nov. 1916.

Survival of the Fittest in War. Literary Digest, vol. 53, pp. 1596–97; Dec. 16, 1916.

War and the Survival of the Fittest. Scientific Monthly, vol. 3, pp. 488–97; Nov. 1916.

BBELL, G. R., Instructor in Radiography.

The Visiting Nurse. Paper read before the Symposium on Community Control of Tuberculosis, Albuquerque Sectional Conference on Tuberculosis, Oct. 13, 1916. Pacific Coast Jour. of Nursing, vol. 13, pp. 278–80; May 1917.

MMEL, W. G., Associate Professor of Agricultural Education.

Agriculture in California High Schools. Alpha Zeta Quarterly, vol. 14, pp. 6–10; June 1916.

RWITZ, S. H., Instructor in Research Medicine.

Intravenous Injections of Colloidal Solutions of Acacia in Hemorrhage. Jour. of the American Medical Assoc., vol. 68, pp. 699–701; Mar. 3, 1917.

On the Reaction of the Cerebrospinal Fluid [with C. L. Tranter]. Archives of Internal Medicine, vol. 17, pp. 828–39; June 1916.

Studies on the Blood Proteins:

I. Serum Globulins in Bacterial Infection and Immunity [with K. F. Meyer]. Jour. of Experimental Medicine, vol. 24, pp. 515–46; Nov. 1916.

II. Albumin-Globulin Ratio in Experimental Intoxications and Infections [with S. H. Whipple]. *Ibid.*, vol. 25, pp. 231–53; Feb. 1917.

DE, C. G., Professor of Sanitary Engineering.

Argument Favoring the Passage of Ordinance No. 483 n. s., Berkeley (relating to the municipal collection of refuse). Information Submitted in Connection with Sample Ballot; Apr. 1917.

Report upon Possible Sources of Water Supply for Sacramento [with G. H. Wilhelm and F. C. Miller]. 30+660 pp.; Pub. by the City of Sacramento; 1916.

Report upon the Sanitary Quality of the Owens River Water Supply Delivered to Consumers in Los Angeles through the Los Angeles Aqueduct System. Construction of the Los Angeles Aqueduct Final Report, pp. 292–319; 1916.

Research and Sanitary Engineering. Trans. of the Commonwealth Club of Calif., vol. 12, pp. 112–15; Apr. 1917.

Irwin, F., Instructor in Mathematics.

Problems Proposed for Solution. Amer. Mathematical Monthly, vol. 23, p. 386; Dec. 1916: vol. 24, p. 176; Apr. 1917.

Solutions of Problems. *Ibid.*, vol. 23, pp. 220–21; June 1916: pp. 259–60; Sept. 1916: p. 310; Oct. 1916: p. 344, pp. 352–53; Nov. 1916: p. 394; Dec. 1916: vol. 24, p. 40; Jan. 1917.

Jepson, W. L., Associate Professor of Botany.

Atriplex Hymenelytra. Victorville News-Herald; Feb. 16, 1917.

Mohave Desert. Gardening Illustrated (London); June 9, 1917.

Native Walnuts of California. Madroño, vol. 1, pp. 55–57; Apr. 1917.

Protection and Preservation of California's Flora. Calif. Wild Flower Fete, 1917. Report on Wild Flowers of Calif., p. 13; Apr. 1917.

Springtime in the Desert. Univ. Calif. Jour. of Agric., vol. 4, pp. 214–15; Mar. 1917.

Jones, H. A., Reader in Jurisprudence.

Contracts: Employment: Condition in Contract That Employer May Fix Compensation To Be Paid for Services. Calif. Law Rev., vol. 4, p. 498; Sept. 1916.

Criminal Law: Distinction between Larceny and Embezzlement. *Ibid.*, vol. 5, p. 73; Nov. 1916.

Easements: Profits â Prendre: Nature of Right To Take Water from Pipes. *Ibid.*, vol. 5, p. 340; May 1917.

Persons: The Status of Convicts. *Ibid.*, vol. 5, p. 81; Nov. 1916.

Jones, K. D., Assistant in Landscape Gardening.

Vines for California. L. H. Bailey. Standard Cyclopedia of Horticulture, vol. 5, pp. 2705–06; 1916.

Vines, Perennial Herbs and Annuals. Bull. no. 20 of the Calif. State Board of Education, pp. 42–52; May 1917.

Jones, L. T., Instructor in Physics.

Experimental Verification of the Law of Variation of Mass with Velocity for Cathode Rays. Physical Rev., vol. 8, p. 14; July 1916.

Jones, W. C., Professor of Jurisprudence.

Is the Regulation of Railroad Crossings a Municipal Affair? Calif. Law Rev., vol. 5, pp. 292–302; May 1917.

Justice Field's Opinions on Constitutional Law: I. Commerce under the Constitution. *Ibid.*, vol. 5, pp. 108–28; Jan. 1917.

ELLEY, W. P., Professor of Agricultural Chemistry.

Nitrification in Semiarid Soils. Jour. of Agric. Research, vol. 7, pp. 417–37; Dec. 1916.

EMP, W. W., Professor of School Administration.

The Oakland Situation and the Resulting Code of Educational Principles. Sierra Educational News, vol. 12, pp. 155–60; Apr. 1917.

ENDALL, J. N., Assistant in Botany.

Account of the Mode of Floral Abscission in the F_1 Species Hybrids of Nicotiana [with T. H. Goodspeed]. Univ. Calif. Publ. Botany, vol. 5, pp. 293–99; 1916.

ENNEDY, P. B., Assistant Professor of Agronomy.

Annotated List of Wild Flowers of California. 165 pp; San Francisco, Levison Printing Co.; 1917.

Sudan Grass [with B. A. Madson]. Univ. Calif. Agric. Exp. Sta. Bull. no. 277, pp. 197–224; Mar. 1917.

ERN, O. J., Assistant Professor of Agricultural Education.

Marketing the American Farm Boy. Breeder's Gazette, vol. 71, pp. 969–70; May 10, 1917.

Preparedness for Country Life (eight articles). School News, vol. 30; Oct. 1916–June 1917.

Talk with Farm Boys and Girls—The New Grand Army of the Republic. Breeder's Gazette, vol. 70, pp. 1178–1240; Dec. 21, 1916.

LGORE, E. S., Assistant Professor of Medicine.

Aglutinins and Complement-fixing Antibodies in the Serum of Persons Vaccinated Against Typhoid Fever. Archives of Internal Medicine, vol. 19, pp. 293–310; Feb. 1917.

Comparison of Two Methods of Vaccinating against Typhoid Fever. *Ibid.*, vol. 19, pp. 275–92; Feb. 1917.

Typhoidin Quotients: an Analysis of the Factors of Uncertainty in the Cutaneous Typhoidin Test. *Ibid.*, vol. 19, pp. 263–75; Feb. 1917.

OCHER, R. A., Instructor in Research Medicine.

Effect of Activity on the Histological Structure of Nerve Cells. Jour. of Comparative Neurology, vol. 26, pp. 341–57; 1916.

Mechanism of the Sparing Action of Carbohydrates on Protein Metabolism. Jour. of Biological Chemistry, vol. 25, pp. 571–76; July 1916.

FOID, C. A., Professor of Zoology, Assistant Director of the Scripps Institution for Biological Research.

Biological and Medical Significance of the Intestinal Flagellates. Proc. of the Second Pan-American Scientific Congress, vol. 10, pp. 546–565; 1917.

Review: Kober and Hanson. *Diseases of Occupational and Vocational Hygiene.* Dial, vol. 62, p. 151; Feb. 22, 1917.

Review: Pani. *Hygiene in Mexico.* *Ibid.*, vol. 62, p. 532; June 1917.

Review: Pratt. *Manual of the Common Invertebrate Animals. Ibid.* vol. 62, p. 109; Feb. 8, 1917.

War and the Race: Reviews: Bodart. *Losses of Life in Modern War.* Kellogg. *Military Selection and Race Deterioration. Ibid.*, vol. 61 p. 401; Nov. 16, 1916.

Report of the Committee of Inquiry concerning Charges of Violation of Academic Freedom, involving the Dismissal of the President and three Members of the Faculty, at the University of Montana. Bull. Am. Assoc. Univ. Professors, vol. 3, no. 5, 52 pp.; May 1917.

Kress, G. H., Dean of the Faculty, Los Angeles Medical Department.

Organized Medicine: Some of Its California Problems. Calif. State Jour. of Medicine, vol. 15, pp. 186–92; June 1917.

Kroeber, A. L., Associate Professor of Anthropology and Curator of the Anthropological Museum.

California Kinship Systems. Univ. Calif. Publ. Amer. Archaeology and Ethnology, vol. 12, no. 9, pp. 339–96; May 1917.

California Place Names of Indian Origin. *Ibid.*, vol. 12, pp. 31–69; 1916.

Heredity without Magic. Amer. Anthropologist, n.s., vol. 18, pp. 294–96; 1916.

Speech of a Zuñi Child. *Ibid.*, vol. 18, pp. 529–34; 1916.

The Superorganic. *Ibid.*, vol. 19, pp. 163–213; 1917.

Thoughts on Zuñi Religion. Holmes Anniversary Volume, pp. 269–77; 1916.

Zuñi Kin and Clan. Anthropological Papers, Amer. Museum of Natural History, vol. 18, pp. 47–204; 1917.

Lange, A. F., Professor of Education, Director of the School of Education.

California and the Fresno Normal School. Sierra Educational News, vol. 13, no. 3, p. 107; Mar. 1917.

New High School and the New High School Teacher. School and Society, vol. 4, no. 86, pp. 267–72; Aug. 1916.

Preparedness. *Ibid.*, vol. 5, no. 106, pp. 1–10; Jan. 1917.

Reorganization of Rural Education. Proc. of the California High School Teachers' Assoc.; 1916.

Langstroth, L., Assistant in Medicine.

Analysis of Out-Patient Work from the Point of View of Efficiency. Jour. of the Amer. Medical Assoc., vol. 67, pp. 91–94; July 8, 1916.

Lea, E. J., Associate Professor of Nutrition.

Biennial Report of the State Food and Drug Laboratory. Biennial Report of the Calif. State Board of Health, vol. 24, pp. 127–63; Dec. 1916.

Monthly Report of the Work of the State Food and Drug Laboratory. Monthly Bull. of the Calif. State Board of Health; July 1916–June 1917.

CONTE, J. N., Professor of Engineering Mechanics.

Small Scale Test of Flow by Chemi-Hydrometry. Jour. of Electricity, Power and Gas, vol. 38, no. 5, p. 160; Mar. 1, 1917.

EBRICK, K. C., Instructor in History.

Troubles of an English Governor in the Philippines. H. M. Stephens and H. E. Bolton, ed. The Pacific Ocean in History, pp. 192–213; 1917.

Unedited Documents of the Indies at Seville, Spain [with F. Adams]. Bull. of the Pan-American Union; Apr. 1917.

GGE, R. T., Professor of Hygiene and University Physician.

Health Insurance at the University. Berkeley Civic Bull., vol. 5, p. 62; Nov. 6, 1916.

Student's Health Insurance at the University of California. Calif. State Jour. of Medicine, vol. 15, p. 102; Apr. 1917.

HMER, D. N., Associate Professor of Mathematics.

The Organ; poem. Forum, vol. 57, p. 236; Feb. 1917.

Synthetic Projective Geometry. 123 pp.; Boston, Ginn, 1917.

USCHNER, A. O., Professor of Astronomy, Director of the Students' Observatory, Dean of the Graduate Division.

The Derivation of Orbits, Theory and Practice. Science, vol. XLV, pp. 571–584; June 1917.

The Duty of State-supported Universities in Regard to Scientific, Historical, Economic, and Political Research and Publication of Such Research. Proceedings of the Second Pan-American Scientific Congress, section IV, part 2, vol. V, pp. 308–321; 1917.

Report of the Committee on Academic and Professional Higher Degrees of the Association of American Universities. A. O. Leuschner, chairman; W. H. Carpenter, G. C. Comstock, C. H. Haskins, R. D. Salisbury. Journal of Proceedings and Addresses of the Eighteenth Annual Conference of the Association of American Universities; Nov. 1916.

Modern Tendencies in Education. The Seventy-fifth Anniversary of the Oahu College, H. I.; 1916.

VIS, C. I., Assistant Professor of Philosophy.

Issues Concerning Material Implication. Jour. of Philosophy, Psychology and Scientific Methods, vol. 14, pp. 350–56; June 21, 1917.

VIS, E. P., Professor of Physics.

Recent Progress in Spectroscopy. Vice-Presidential Address, Section B, American Association for the Advancement of Science. Science, n.s., vol. 44, pp. 899–912; Dec. 29, 1916.

Same. Nature, vol. 99, pp. 115–18, 134–37; Apr. 5 and 12, 1917.

Reviews: Gomez and Machado. *Elementes de fisica descritiva;* Dadourian. *Analytical Mechanics,* ed. 2. Physical Rev., vol. 8, pp. 579–80; Nov. 1916.

Lewis, G. N., Professor of Physical Chemistry and Dean of the College of Chemistry.

Electrical Conduction in Dilute Amalgams [with T. B. Hine]. Proc. of the National Academy of Sciences, vol. 2, pp. 634–38; Nov. 1916.

Free Energy of Bromine Compounds [with M. Randall]. Jour. of the Amer. Chemical Soc., vol. 38, pp. 2348–56; Nov. 1916.

Steric Hindrance and the Existence of Odd Molecules (Free Radicals). Proc. of National Academy of Sciences, vol. 2, pp. 586–92; Oct. 1916.

Linhart, G. A., Teaching Fellow in Chemistry.

Applicability of the Ferro-Ferricyanide Electrode to the Measurement of the Activities of Electrolytes in Concentrated Solutions. Jour. of the Amer. Chemical Soc., vol. 39, pp. 615–21; Apr. 1917.

Equilibria of Mercuric Chloride with Other Chlorides. *Ibid.,* vol. 38, pp. 1272–80; July 1916.

Potential of the Mercury Electrode Against Mercurous Ion. *Ibid.,* vol. 38, pp. 2356–61; Nov. 1916.

Reduction of Mercuric Compounds [with E. Q. Adams]. *Ibid.,* vol. 39, p. 948–50; May 1917.

Lipman, C. B., Professor of Soil Chemistry and Bacteriology.

Ammonifiability versus Nitrifiability as a Test for the Relative Availability of Nitrogenous Fertilizers [with P. S. Burgess]. Soil Science, vol. 3, p. 63; Jan. 1917.

Brief Reflections on Some Tendencies among Agricultural Workers. Univ. Calif. Jour. of Agric., vol. 4, no. 5, p. 157; Jan. 1917.

Comparison of the Nitrifying Powers of Some Humid and Some Arid Soils [with P. S. Burgess and M. A. Klein]. Jour. of Agric. Research, vol. 7, no. 2, p. 47; Oct. 1916.

Experiments on the Effects of Constituents of Solid Smelter Wastes on Barley Growth in Pot Cultures [with W. F. Gericke]. Univ. Calif. Publ. Agric. Science, vol. 1, no. 13, p. 495; Mar. 1917.

Few Observations on Opportunities in Agricultural Research. Univ. Calif. Jour. of Agric., vol. 4, no. 7, p. 297; Mar. 1917.

More ''Mottle Leaf'' Discussion. Science, n.s., vol. 45, p. 308; Mar. 1917.

Report of the Associate Referee on Soils, 1915. Jour. of the Assoc. of Official Agric. Chemists, vol. 1, no. 3, p. 422.

Review: Whiting. *Soil Biology Laboratory Manual,* Plant World, vol. 20, no. 5, p. 159; May 1917.

Some Observations on the Present Status of the Subject of the Availability of Nitrogen in Fertilizers. Jour. of Industrial and Engineering Chemistry, vol. 9, no. 2, p. 189; Feb. 1917.

Same. Amer. Fertilizer, vol. 45, no. 8; Nov. 1916.

Same. Hawaiian Planter's Record, vol. 16, no. 3, p. 220; Mar. 1917.

Vegetation Experiment on the Availability of Nitrogenous Fertilizers in an Arid Soil [with W. F. Gericke]. Soil Science, vol. 2, p. 575; Dec. 1916.

ISSER, H., Assistant in Medicine.

Eye, Ear, Nose, and Throat in Diseases of the Thyroid and Thymus. Ophthalmic Record, vol. 25, pp. 433–40; Sept. 1916.

OEWENBERG, J., Instructor in Philosophy.

James-Lange Theory in Lessing. Jour. of Amer. Psychology, vol. 28, p. 301; Apr. 1917.

Josiah Royce, Interpreter of American Problems. Univ. Calif. Chronicle, vol. 19, p. 39; Jan. 1917.

Spirit of Hegel's Philosophy. *Ibid.*, vol. 18, p. 373; July 1916.

Teachings of Royce. Calif. Alumni Fortnightly, vol. 9, p. 216; Sept. 30, 1916.

ONG, J. A., Assistant Professor of Embryology.

How Life Begins: the Story of How Plants and Animals Come into Existence [with G. E. Stone]. Moving Picture Film in Four Reels.

Ovulation in Mice [with H. P. Smith]. Science, n.s., vol. 44, p. 797; Dec. 1916.

Ovulation Period in Rats [with J. E. Quisno]. *Ibid.*, vol. 44, pp. 795–96; Dec. 1916.

UCAS, W. P., Professor of Pediatrics.

General Health Conditions in Belgium. Jour. of the Amer. Medical Assoc., vol. 68, pp. 27–32; Jan. 6, 1917.

ACAULAY, F. R., Instructor in Economics.

Review: Robertson. *Study of Industrial Fluctuation.* Jour. of Political Economy, vol. 25, no. 3, pp. 302–04; Mar. 1917.

cCORMAC, E. I., Associate Professor of American History.

Our Debt to France. Berkeley Daily Gazette; May 28, 1917.

Review: Mayo. *Jeffrey Amherst.*, Amer. Historical Rev., vol. 22, no. 1, p. 171; Oct. 1916.

EWEN, G. F., Hydrographer and Curator of the Oceanagraphic Museum, Scripps Institution for Biological Research.

Continuation of Hydrographic, Plankton, and Dredging Records of the Scripps Institution for Biological Research of the University of California, 1913–1915 [with E. L. Michael]. Univ. Calif. Publ. Zoology, vol. 15, pp. 207–54; Nov. 1916.

- Summary and Interpretation of the Hydrographic Observations Mad by the Scripps Institution for Biological Research of the Universit of California. *Ibid.*, vol. 15, pp. 255–356, plates 1–38; Dec. 1916.

MacMinn, G. R., Instructor in English.
- At Thirty-one. Texas Rev., vol. 2, no. 4, pp. 351–57; Apr. 1917.
- Critical Compromise. Dial, vol. 61, pp. 123–27; Sept. 7, 1916.
- Emerson and Maeterlinck. Sewanee Rev., vol. 24, no. 3, pp. 265–81 July 1916.
- Maeterlinck and the Romantic Compromise. Mid-West Quarterly, vol. 3 no. 4, pp. 263–95; July 1916.
- Three Attitudes Towards War. Texas Rev., vol. 2, no. 1, pp. 18–25 July, 1916.

Madson, B. A., Assistant Professor of Agronomy.
- Comparison of Annual Cropping, Biennial Cropping and Green Manure on the Yield of Wheat. Univ. Calif. Agric. Exp. Sta. Bull. no. 270 pp. 1–14; Aug. 1916.
- Grain Sorghums. *Ibid.*, no. 278, pp. 225–50; Apr. 1917.
- Grain Sorghums in California. Pacific Rural Press, vol. 93, pp. 298–99; Mar. 1917.
- Growing Milo and Egyptian Corn. Calif. Cultivator, vol. 48, p. 164; Feb. 1917.
- Sudan Grass. Univ. Calif. Agric. Exp. Sta. Bull. no. 277, pp. 193–224; Mar. 1917.

Marshall, J. A., Instructor in Biochemistry and Pharmacology.
- Composition of Saliva in Relation to the Incidence of Dental Caries. Amer. Jour. of Physiology, vol. 43, p. 212; May 1917.
- Further Discussion of the Salivary Factor as an Aid in the Diagnosis of Dental Caries or Immunity Therefrom. Dental Cosmos, vol. 59, p. 33; Jan. 1917.
- Reply to Criticism of the Value of the Salivary Factor as an Aid in the Diagnosis of Dental Caries. *Ibid.*, vol. 58, p. 1225; Nov. 1916.

Mattill, H. A., Assistant Professor of Nutrition.
- Digestibility of the Fat of the Avocado. Annual Report of the Calif. Avocado Assoc., 1916, pp. 93–95; Mar. 1917.
- Some Metabolic Effects of Bathing in the Great Salt Lake, II [with H. I. Mattill]. Amer. Jour. of Physiology, vol. 41, pp. 143–52; Aug. 1916.

Mauk, E. H., Professor of Prosthetic Dentistry.
- Anatomical Articulation of (Artificial) Teeth: Gysi System and Others. Bull. of the Calif. State Dental Assoc., vol. 2, no. 2, pp. 22–30; Feb. 1917.

Mead, E., Professor of Rural Institutions.
- Colonization in California. Trans. of the Commonwealth Club of Calif., vol. 11, p. 397; Dec. 1916.

Land Settlement a Public Question. Report of the National Conference on Marketing and Farm Credits, p. 101; Dec. 1916.

New Land Settlement Policy. N. Y. Independent, p. 435; Mar. 12, 1917.

What Is Wrong with Our Legislatures? *Ibid.*, p. 670; Jan. 8, 1917.

What Our Government Ought to Do and Ought to Be. Metropolitan, p. 16; Jan. 1917.

Meads, A. M., Lecturer in Hygiene and Associate Infirmary Physician.

Attitude of the Physician towards the Venereal Patient. Calif. State Medical Jour.; Jan. 1917.

Merriam, J. C., Professor of Palaeontology and Historical Geology.

Age of Strata Referred to the Ellensburg Formation in the White Bluffs of the Columbia River [with J. P. Buwalda]. Univ. Calif. Publ. Bull. of the Dept. of Geology, vol. 10, no. 15, pp. 255–66; Apr. 1917.

An American Pliocene Bear [with C. Stock and C. L. Moody]. *Ibid.*, vol. 10, no. 7, pp. 87–109; Nov. 1916.

Mammalian Remains from a Late Tertiary Formation at Ironside, Ore. *Ibid.*, vol. 10, no. 9, pp. 129–35; Dec. 1916.

Mammalian Remains from the Chanac Formation of the Tejon Hills, California. *Ibid.*, vol. 10, no. 8, pp. 111–27; Dec. 1916.

Review: Osborn. *Men of Old Stone Age*. Amer. Anthropologist, vol. 18, no. 3; July–Sept. 1916.

Review: Pirsson and Schuchert. *Text Book of Geology; Part II, Historical Geology*. Amer. Geographical Rev., p. 246; Sept. 1916.

Merrill, W. A., Professor of Latin Language and Literature.

Review: Ernout. *Lucretius, Book IV*. Classical Philology, vol. 11, p. 479; Oct. 1916.

Review: Stampini. *Studi di letteratura latina*. *Ibid.*, vol. 12, p. 216; Apr. 1917.

Meyer, K. F., Associate Professor of Tropical Medicine.

Agglutinins and Complement-fixing Bodies in the Serum of Persons Vaccinated against Typhoid Fever [with E. S. Kilgore]. Archives of Internal Medicine, vol. 19, no. 2, pp. 293–310; Feb. 1917.

Epidemiologic and Bacteriologic Observations on Paradysentery in California [with J. Stickel]. Calif. State Jour. of Medicine, vol. 15, p. 139–46; May 1917.

Intracutaneous ''Typhoidin'' Reaction:

I. Preparation and Properties of the Antigen [with C. R. Christiansen]. Jour. of Infectious Diseases, vol. 20, pp. 357–90; Apr. 1917.

II. Nature and Specificity of the Reaction [with C. R. Christiansen]. *Ibid.*, vol. 20, pp. 391–423; Apr. 1917.

III. Relation of Cutaneous Hypersensitiveness to Experimental Immunity and Infection. *Ibid.*, vol. 20, pp. 424–41; Apr. 1917.

Laboratory Infection Caused by a Bovine Strain of Bacillus Enteritidis. *Ibid.*, vol. 19, pp. 700–07; Nov. 1916.

Nonspecific Treatment of Infectious Diseases in Animals. Jour. of the Amer. Veterinary Medical Assoc., vol. 4, no. 1, pp. 116–22; Apr. 1917.

Note on the Occurrence of Equine Sporotrichosis in Montana and the ''Blasto-mychotic'' Form of Sporotrichum Schenki-Beurmanni. Proc. of the Soc. for Experimental Biology and Medicine, vol. 14, pp. 23–24; Dec. 1916.

Studies on the Blood Proteins: I. Serum Globulins in Bacterial Infection and Immunity [with S. H. Hurwitz]. Jour. of Experimental Medicine, vol. 24, pp. 515–46; Nov. 1, 1916.

Milberry, G. S., Professor of Dental Chemistry and Metallurgy and Dean of the College of Dentistry.

Problem of Dental Hygiene in Children. Archives of Pediatrics, pp. 533–38; July 1916.

Public Dental Clinics in California. Monthly Bull. of the Calif. State Board of Health, vol. 12, pp. 132–39; Mar. 1917.

Miller, M. R., Assistant Chemist in Insecticide Control.

Analyses of Some More Recent and Older Pest Remedies. Monthly Bull. of the Calif. State Comm. of Horticulture, vol. 6, pp. 23–26; Jan. 1917.

Miller, R. F., Assistant Professor of Animal Husbandry.

Sheep and Wool for the Farmer. Univ. Calif. Jour. of Agric., vol. 4, p. 223; Mar. 1917.

Mitrani, C. S., Reader in History.

New Light on Father Serra [with C. E. Chapman]. Grizzly Bear Magazine, vol. 20, no. 5, p. 5; Mar. 1917: vol. 20, no. 6, pp. 1–2; Apr. 1917: vol. 21, no. 1, p. 6; May 1917.

Moffitt, H. C., Professor of Medicine and Dean of the Medical School.

Critical Analysis of Out-Patient Work from the Point of View of Efficiency. Jour. of the Amer. Medical Assoc., vol. 67, pp. 91–94; July 8, 1916.

Moore, J. H., Assistant Astronomer, Lick Observatory.

Addendum to Note on the Internal Velocities of Nebulae [with W. W. Campbell]. Publ. of the Astronomical Soc. of the Pacific, vol. 28, pp. 213–14; Oct. 1916.

Four Nebulae with Bright-Line Spectra [with W. W. Campbell]. *Ibid.*, vol. 29, pp. 54–55; Feb. 1917.

Note on the Spectral Type and the Radial Velocity of Barnard's Proper Motion Star [with W. W. Campbell]. *Ibid.*, vol. 28, pp. 207–08; Oct. 1916.

On the Forms of Spectral Lines Observed in the Planetary Nebulae N.G.C. 7662 and N.G.C. 2392 [with W. W. Campbell]. *Ibid.*, vol. 29, p. 133; June 1917.

On the Observed Rotations of Planetary Nebulae [with W. W. Campbell]. *Ibid.*, vol. 28, pp. 283–85; Dec. 1916.

On the Rotation of the Nebula Jonckheere 320 [with W. W. Campbell]. *Ibid.*, vol. 29, p. 56; Feb. 1917.

Six Stars Whose Radial Velocities Vary. Lick Observatory Bull., vol. 9, p. 37–38; Oct. 1916.

Spectrographic Observations of Rotation in the Planetary Nebula N.G.C. 7026 [with W. W. Campbell]. Publ. of the Astronomical Soc. of the Pacific, vol. 29, pp. 55–56; Feb. 1917.

Spectroscopic Observations of Relative Motions in the Orion Nebula [with W. W. Campbell]. *Ibid.*, vol. 29; June 1917.

Moore, L. M., Instructor in Physiology.

Can a Neurotoxin Be Obtained from the Corpus Striatum? Jour. of Immunology, vol. 1, pp. 525–29; Oct. 1916.

Morgan, A. F., Assistant Professor of Household Science.

Molecular Rearrangement of Some Triarylmethylchloroamines. Jour. of the Amer. Chemical Soc., vol. 38, pp. 2095–2101; Oct. 1916.

Morgan, D. N., Associate Professor of Agriculture and Assistant to Director of the Agricultural Experiment Station.

Land Settlement. Proc. of the Third Quarterly Meeting of the Calif. Development Board, pp. 14–18; Nov. 24, 1916.

Proposed Solution of Farm Labor Problem. Pacific Rural Press, vol. 93, p. 652; May 26, 1917.

Report of the California State Commission on Land Colonization and Rural Credits [with E. Mead]. 87 pp.; Nov. 29, 1916.

Morley, S. G., Assistant Professor of Spanish.

Color Symbolism in Tirso de Molina. Romanic Rev., vol. 8, pp. 77–81; Jan.–Mar. 1917.

A Cosmopolitan Poet (Rubén Darió). Dial, vol. 62, pp. 509–11; June 1917.

Morris, W. A., Assistant Professor of English History.

Review: Gray. *English Field Systems.* Amer. Historical Rev., vol. 21, pp. 783–84; July 1916.

Review: Tait. *Domesday Survey of Cheshire.* *Ibid.*, vol. 22, p. 194; Oct. 1916.

Morrow, H., Clinical Professor of Dermatology.

Teaching of Dermatology. Jour. of the Amer. Medical Assoc., vol. 67, p. 551; Aug. 1916.

MULFORD, W., Professor of Forestry.
War Zone Forest of the Kern. Sierra Club Bull., vol. 10, pp. 155–58, plates 159–60, 168; Jan. 1917.

NAHL, P. W., Instructor in Freehand Drawing and Art Anatomy.
Correlation of Freehand and Mechanical Drawing. Proc. of the Calif. High School Teachers' Assoc., Sierra Educational News, vol. 2, no. 8, pp. 37–39; Aug. 1916.

NALDER, F. F., Secretary, Bureau of Correspondence Instruction, University Extension.
Has University Extension Fully Justified Itself? School and Society, vol. 5, pp. 751–58; June 30, 1917.

NELSON, J. W., Assistant Professor of Soil Technology.
Soil Survey of the Los Angeles Area, California. U. S. Dept. of Agric., Bureau of Soils; 1916.
Soil Survey of Ventura County, California. *Ibid.;* 1917.
Soil Survey of the Middle San Joaquin Valley Area. Reconnaisance. *Ibid.;* 1916.

NEUHAUS, E., Assistant Professor of Decorative Design.
Art Education. Wasp, vol. 74, pp. 14–16; Dec. 1916.

NOYES, G. R., Associate Professor of Slavic Languages.
Goncharov. Nation, vol. 103, p. 105–06; Aug. 3, 1916.
Note: Artzibashev. *War. Ibid.,* vol. 104, p. 346; Mar. 22, 1917.
Note: Hapgood. *Epic Songs of Russia. Ibid.,* vol. 103, p. 615; Dec. 28, 1916.
Note: Machar. *Magdalen. Ibid.,* vol. 103, p. 516; Nov. 30, 1916.
Note: Murry. *Dostoievsky. Ibid.,* vol. 104, p. 23; Jan. 4, 1917.
Note: *Poland's Case for Independence. Ibid.,* vol. 104, p. 738; June 21, 1917.
Note: Soloviev. *Dostoievsky. Ibid.,* vol. 103, pp. 356–57; Oct. 12, 1916.
Novel in Russia. Harvard Classics: Shelf of Fiction, vol. 16; May 1917.
Pan Tadeusz; or, The Last Foray in Lithuania: by Adam Mickiewicz. Translated from the Polish with introduction and notes. 24+354 pp.; London, J. M. Dent & Sons; 1917.
Review: Sologub. *The Little Demon, The Old House, The Sweet-Scented Name.* Nation, vol. 103, pp. 421–22; Nov. 2, 1916.
Review: *The Tale of the Armament of Igor,* edited and translated by Magnus. *Ibid.,* vol. 103, pp. 489–90; Nov. 23, 1916.

NUTTING, H. C., Assistant Professor of Latin.
Carmen Pastorale. Classical Weekly, vol. 10, p. 200; Apr. 1917.
Circumstantial-Temporal Cum-Clauses. *Ibid.,* vol. 10, p. 16; Oct. 1916.
Cumulative Argument for the Study of Latin. School and Society, vol. 4, pp. 858–59; Dec. 1916.

Curriculum of the Secondary School. *Ibid.*, vol. 4, pp. 42–49; July 1916.

Epistolary Use of Past Tenses. Classical Weekly, vol. 10, p. 71; Dec. 1916.

General Discipline and the Study of Latin. School and Society, vol. 5, pp. 261–63; Mar. 1917.

Invalids or Quitters? Jour. of Education, vol. 84, pp. 206–07; Sept. 1916.

Nos and Noster for Ego and Meus. Classical Weekly, vol. 10, p. 71; Dec. 1916.

On the Teaching of Cicero's Orations. Classical Jour., vol. 12, pp. 254–62; Jan. 1917.

Review: Dean and Deferrari. *Selections from the Roman Historians.* Classical Jour., vol. 12, pp. 284–85; Jan. 1917.

Review: Steele. *Case Usage in Livy, III and IV.* Classical Philology, vol. 12, p. 222; Apr. 1917.

Vocational Latin. *Ibid.*, vol. 12, pp. 319–27; Feb. 1917.

CONNOR, R., Assistant in Ophthalmology.

New Shortening Technic, with Report of Forty-two Operations. Jour. of the Amer. Medical Assoc., vol. 67, pp. 268–74; July 22, 1916.

CKARD, W. E., Assistant Professor of Agronomy and Experimental Agronomist in charge of Imperial Valley Station.

Agriculture in the Imperial Valley. Univ. Calif. Agric. Exp. Sta. Circ. no. 159; Jan. 1917

New Cotton Fields of the Southwest. Proc. of the National Assoc. of Cotton Manufacturers, vol. 102; Apr. 1917.

DDOCK, G. F., Assistant in Astronomy.

Distances and Distribution of Class B Stars. Publ. of the Astronomical Soc. of the Pacific, vol. 29, pp. 65–67; Feb. 1917.

Five Southern Spectroscopic Binaries and Light-Variables of the *Delta Cephei* Class. *Ibid.*, vol. 29; June 1917.

Note on the Identification of Two More Lines in the Spectrum of *Upsilon*$_4$ *Eridani.* Lick Observatory Bull., vol. 9, no. 288, p. 47; Jan. 1917.

Notes on the Spectrum of *Gamma Argus.* *Ibid.*, vol. 9, no. 287, pp. 40–41; Oct. 1916.

Radial Velocities of Eleven Southern Light-Variables. *Ibid.*, vol. 9, no. 294, pp. 68–73; May 1917.

R S Sagittarii, *Algol* Variable and Spectroscopic Binary. *Ibid.*, vol. 9, no. 287, p. 39; Oct. 1916.

The Spectroscopic Binary h 4 *Centauri.* *Ibid.*, vol. 9, no. 288, pp. 42–47; Jan. 1917.

Same. Publ. of the Astronomical Soc. of the Pacific, vol. 29, pp. 56–57; Feb. 1917.

Wolf-Rayet Bands in the Nuclei of Three Nebulae: N.G.C. 6826, N.G. 418_2, N.G.C. 40. Lick Observatory Bull., vol. 9, no. 284, pp. 29–30 Sept. 1916.

Pernot, F. E., Assistant Professor of Electrical Engineering.

Alternating and Transient Currents in Coupled Electrical Circuit Univ. Calif. Publ. Engineering, vol. 1, pp. 161–260; Sept. 1916.

Eleectrostatic Capacity of Three Parallel Cylinders. *Ibid.*, vol. 1, p 269–80; Feb. 1917.

Formulae and Tables for the Design of Air-Core Inductance Coil *Ibid.*, vol. 1, pp. 117–60; Sept. 1916.

Philbrick, F. S., Professor of Law.

Rational Bases for Ultimate Durable Peace. Class-Day Addres Nebraska State University, June 12, 1917. Nebraska State Journal Lincoln, Nebraska; June 13, 1917.

Same. University Journal, pp. 4–8; July 1917.

Pope, W. T., Instructor in Botany.

Increase of Food Production in California. Prepared for the Stat Council of Defense; May 4, 1917.

Price, L. M., Instructor in German.

Feud of the Schroffensteins; a Drama in Five Acts by Heinrich von Kleist. Translated into blank verse [with M. J. Price]. Poet Lore, vol. 27, pp. 457–576; Sept. 1916.

Heinrich von Kleist. *Ibid.*, vol. 27, pp. 577–90; Sept. 1916.

Priestley, H. I., Assistant Professor of History and Assistant Curator of the Bancroft Library.

José de Gálvez, Visitor-General of New Spain (1765–1771). Univ. Calif. Publ. History, vol. 5, 449 pp.; Oct. 1916.

Probert, F. H., Professor of Mining.

Surficial Indications of Copper. (Pamphlet.) Mining and Scientific Press. 96 pp.; Oct. 1916.

Surficial Indications of Copper, IV. Mining and Scientific Press, vol. 113, pp. 81–87; July 15, 1916.

Surficial Indications of Copper, V. *Ibid.*, vol. 113, pp. 267–75; Aug. 19, 1916.

Treasure Chest of Mercurial Mexico. National Geographic Magazine, vol. 30, pp. 33–67; July 1916.

Quayle, H. J., Professor of Entomology.

Dispersion of Scale Insects by the Wind. Jour. of Economic Entomology, vol. 9, pp. 486–92; Oct. 1916.

Some Comparisons of *Coccus Citricola* and *C. Hesperidum*. *Ibid.*, vol. 10, pp. 373–76; June 1917.

LSTON, W. R., Assistant in Agricultural Extension.

Practical Orange Testing. Univ. Calif. Jour. of Agric., vol. 4, p. 133; Dec. 1916.

ED, T. H., Associate Professor of Government.

Abstract of the Budget Estimates of the City Manager for the Year 1916–1917. 12 pp.; pub. by the City of San Jose.

City Manager in San Jose, Cal. Engineering and Contracting, vol. 46, pp. 476–77.

City Manager Plan in Operation. Calif. Taxpayer's Jour., vol. 1, pp. 19–21.

City Manager Plan in San Jose. Pacific Municipalities, vol. 30, pp. 452–56.

Form and Functions of American Government. 549 pp.; World Book Co.; 1916.

Report of Progress to the City Council, Dec. 4, 1916. 8 pp.; pub. by the City of San Jose.

HARDSON, L. J., Associate Professor of Latin.

Review: Martin. *The Birds of the Latin Poets.* Classical Philology, vol. 12, pp. 215–16; Apr. 1917.

TER, W. E., Professor of Zoology and Scientific Director of the Scripps Institution for Biological Research.

Biology's Contribution to a System of Morals That Would Be Adequate for Modern Civilization. Bull. of the Scripps Institution, no. 2, pp. 1–8; Jan. 1917.

Business Man's Appraisement of Biology. Science, n.s., vol. 44, pp. 819–22; Dec. 1916.

Culture Value of Science. *Ibid.*, n.s., vol. 44, pp. 261–64; Aug. 1916.

Place of Description, Definition, and Classification in Philosophical Biology. Scientific Monthly, vol. 3, pp. 457–70; Nov. 1916.

Science in the Service of the Nation. Science, n.s., vol. 44, pp. 640–41; Nov. 1916.

What the Scripps Institution Is Trying To Do. Bull. of the Scripps Institution, no. 1, pp. 19–24; Dec. 1916.

DHOUSE, C. L., Associate Professor of Veterinary Science.

New California Dairy Law. Univ. Calif. Jour. Agric., vol. 4, p. 43; Oct. 1916.

ERTSON, R. D., Instructor in Agricultural Extension.

Investigations of the Economical Duty of Water for Alfalfa in Sacramento Valley, California, 1910–1915 [with F. Adams, S. H. Becket, W. A. Hutchins, and O. W. Israelson]. Bull. no. 3 of the Calif. State Dept. of Engineering, 78 pp.; Feb. 1917.

Irrigation of Rice in California. Univ. Calif. Agric. Exp. Sta. Bull. no. 279, 17 pp.; May 1917.

Report of Measurements of the Duty of Water for Rice in Sacram Valley, Cal. Report of the Calif. State Water Comm., pp. 93- Jan. 1917.

Robertson, T. B., Professor of Biochemistry and Pharmacology.
Electrically Heated Vacuum Desiccator [with C. L. A. Schmidt]. J of Biological Chemistry, vol. 27, pp. 429–31; Nov. 1916.
Experimental Studies on Growth:
V. Influence of Cholesterol upon the Growth of the White Mo *Ibid.*, vol. 25, pp. 635–46; July 1916.
VI. Influence of Lecithin upon the Growth of the White Mo *Ibid.*, vol. 25, pp. 647–61; July 1916.
VII. Influence of the Administration of Egg Lecithin and of lesterol to the Mother, upon the Growth of the Suckling [with E. Cutler]. *Ibid.*, vol. 25, pp. 663–67; July 1916.
VIII. Influence of a Diet Deficient in Fats and of the Same with Cholesterol Added, upon the Growth of the White Mo *Ibid.*, vol. 27, pp. 393–402; Nov. 1916.
Historical Continuity of Science. Scientific Monthly, pp. 389– Oct. 1916.
Influence of Alkali and Alkaline Earth Salts upon the Rate of Soluti of Casein by Sodium Hydroxide [with K. Miyaki]. Jour. of Biol ical Chemistry, vol. 25, pp. 351–61; July 1916.
Influence of Ethyl Alcohol and Glycerol upon the Rate of Solution Casein by Sodium Hydroxide [with K. Miyaki]. *Ibid.*, vol. pp. 129–42; Aug. 1916.
Recent Investigations on the Influence of the Anterior Lobe of t Pituitary Body upon Growth, and on the Properties of the Grow Controlling Constituent, Tethelin. Endocrinology, vol. 1, pp. 24–2 Jan. 1917.
Science as a Vehicle of Education. Univ. Calif. Chronicle, vol. 19, p 3–11; Jan. 1917.
Strategics of Scientific Investigation. Scientific Monthly, pp. 547–5 Dec. 1916.
Suggestion Regarding the Mechanism of One-sided Permeability in Li ing Tissues. Science, n.s., vol. 45, pp. 567–70; June 1917.

Rogers, S. S., Assistant Professor of Olericulture.
Lettuce Growing in California. Univ. Calif. Agric. Exp. Sta. Cir no. 160, 16 pp.; Mar. 1917.

Rohde, A. M., Instructor in Research Medicine.
Method for the Identification of Phenylalanineuramino-Acid in th Presence of Urea and Animo-Acid. Jour. of Biological Chemistry, vol. 29, Proceedings p. xxvii–xxviii; Mar. 1917.

GGLES, H. E., Instructor in Surgery.

Calcified Deposits in Soft Tissues of Left Forearm. Amer. Atlas of Stereoroentgenology, vol. 3, pp. 82–84; Dec. 1916.

Roentgen Ray Treatment of Goitre. Calif. State Jour. of Medicine, vol. 45, p. 289; July 1916.

Roentgen Ray Treatment of Localized Pyogenic Infections. *Ibid.*, vol. 45, p. 486; Dec. 1916.

Tumor of Abdomen. Amer. Atlas of Stereoroentgenology, vol. 3, p. 84; Dec. 1916.

WYER, W. A., Clinical Professor of Preventive Medicine and Hygiene.

Regulations of the California State Board of Health for the Prevention of Poliomyelitis. Monthly Bull. of the Calif. State Board of Health, vol. 12, pp. 69–73; Aug. 1916.

Regulations of the California State Board of Health for the Prevention of Scarlet Fever. *Ibid.*, vol. 12, pp. 314–17; Dec. 1916.

Regulations of the California State Board of Health for the Prevention of Typhus Fever. *Ibid.*, vol. 12, pp. 186–89; Oct. 1916.

Report of the Secretary of the State Board of Health. Twenty-fourth Biennial Report of the Calif. State Board of Health for the Fiscal Years 1914–1916, pp. 1–17; Dec. 1916.

Rural Sanitation. Monthly Bull. of the Calif. State Board of Health, vol. 12, pp. 74–81; Aug. 1916.

Solution of the Interstate Tuberculosis Problem. Trans. of the Twelfth Annual Meeting of the National Assoc. for the Study and Prevention of Tuberculosis, May 11–12, 1916, pp. 326–32; 1916.

HEVILL, R., Professor of Spanish.

Cervantes, Obras Completas, vol. 6 (*Comedias II*). 324 pp.; Madrid, B. Rodríguez, 1916.

HILLING, H. K., Professor of German Language and Literature.

Bibliography of the Best Books for the Study of German in High Schools and Junior Colleges. 20 pp.; Univ. Calif. Press, May 1917.

Translation in Modern Language Teaching. Modern Language Bull., vol. 3, no. 2, pp. 3–7; June 1917.

HMIDT, C. L. A., Research Assistant in Pathology.

Electrically Heated Vacuum Dessicator [with T. B. Robertson]. Jour. of Biological Chemistry, vol. 27, p. 429; 1916.

On ''Racemized'' Casein. Proc. of the Soc. for Experimental Biology and Medicine, vol. 14, p. 104; 1917.

Studies on the Formation and Antigenic Properties of Compound Proteins. Univ. Calif. Publ. Pathology, vol. 2, p. 157; 1916.

HNEIDER, A., Professor of Pharmacognosy, Economic Pharmaceutical Botany, Histology, and Bacteriology, and Instructor in Materia Medica.

Comments on Some Features of the New Pharmacopoeia. Druggists Circular, vol. 50, pp. 692–94; Nov. 1916.

Cultivation of Belladonna in California. Univ. Calif. Agric. Exp. Sta. Bull. no. 275; Dec. 1916.

Further Note on a Parasitic Saccharomycete of the Tomato (*Nematospora Lycopersici*). Phytopathology, vol. 7, pp. 52–53; Feb. 1917.

Keys to the Identification of Powdered Vegetable Drugs. Pacific Pharmacist; Dec. 1916, Jan. 1917.

Micro-Analysis, Advantages and Possibilities; a Generalization with Illustrations. *Ibid.*, vol. 10, pp. 223–31; Mar. 1917: pp. 252–54; Apr. 1917.

Microscopical Method for Determining the Quality and Purity of Gelatine. Report for the Food and Drug Laboratory, Calif. State Board of Health; Jan. 18, 1917.

Parasitic Saccharomycete of the Tomato. Phytopathology, vol. 6, pp. 395–99; Oct. 1916.

Police Micro-Analysis. Policeman's Monthly, vol. 5, pp. 15–17, 37–39; May 1917.

School for Police as Planned at Berkeley [with A. Vollmer]. Jour. of Criminology, vol. 7, pp. 877–98; Mar. 1917.

Suggestions on a Standard Method for the Microscopical Examination of Tomato Products. Report for the Assoc. of Official Agric. Chemists; Dec. 20, 1916.

Suggestions Regarding Some Interesting Problems in Bacteriology. Univ. Calif. Graduate; 1917.

SEEGER, C. L., Professor of Music.

Harmonic Structure and Elementary Composition [with E. G. Stricklen]. 55 pp.; Berkeley, privately printed; Aug. 1916.

SENGER, J. H., Professor of German, Emeritus.

The Imponderables in Human Conflicts. Argonaut, vol. 79, p. 162; Sept. 1916.

SETCHELL, W. A., Professor of Botany.

Geographical Distribution of the Marine Algae. Address of the Vice-President and Chairman of Section G, Botany, of the American Association for the Advancement of Science, New York, Dec. 27, 1916. Science, n.s., vol. 45, pp. 197–204; Mar. 1917.

Phycotheca Boreali-Americana [with F. S. Collins and I. Holden]. No. 43; Aug. 1916: no. 44; June 1917: no. 45; June 1917.

SEVERIN, H. H. P., Instructor in Entomology.

Soluble Poisons in the Poisoned Bait Spray to Control the Adult of the Apple Maggot (Rhagoletis Lomonella Walsh). Maine Agric. Exp. Sta. Bull. no. 251, pp. 149–68; Apr. 1916.

HARP, L. T., Assistant Professor of Soil Chemistry and Bacteriology.

Acidity and Adsorption in Soils as Measured by the Hydrogen Electrode [with D. R. Hoagland]. Jour. of Agric. Research, vol. 7, no. 3, pp. 123–45; Oct. 1916.

HAW, C. F., Professor of Soil Technology.

Soil Formation. Bulletin, Calif. State Prison, San Quentin, vol. 3, no. 10, pp. 10–11; July 1916.

HOREY, P., Sather Professor of Classical Literature.

Assault on Humanism. Atlantic Monthly; June 1917.

Philological Notes. Classical Philology; Oct. 1916; Jan., Apr. 1917.

MITH, C. O., Instructor in Plant Pathology.

Comparative Resistance of Prunus to Crown Gall. Amer. Naturalist, vol. 51, pp. 47–60; Jan. 1917.

Sour Rot of Lemon in California. Phytopathology, vol. 7, pp. 37–41; Feb. 1917.

MITH, P. E., Instructor in Anatomy.

Effect of Hypophysectomy in the Early Embryo upon the Growth and Development of the Frog. Anatomical Record, vol. 11, pp. 57–64; Oct. 1916.

Experimental Ablation of the Hypophysis in the Frog Embryo. Science, n.s., vol. 44, pp. 280–82; Aug. 1916.

MITH, R. E., Professor of Plant Pathology.

Control of Pear Scab. Univ. Calif. Agric. Exp. Sta. Circ. no. 157, pp. 1–4; Nov. 1916.

TEVENS, I. M., Assistant in Hygiene.

Further Studies on Typhoidin [with J. N. Force]. Archives of Internal Medicine, vol. 19, pp. 440–56; Mar. 1917.

Some Factors Alleged to Influence the Duration and Severity of Vaccinia [with J. N. Force]. Jour. of the Amer. Medical Assoc., vol. 68, pp. 1247–50; Apr. 28, 1917.

TEVENS, R. T., Assistant Professor of Landscape Gardening.

Landscape Improvement of Rural School Grounds. Calif. State Board of Education, Bull. no. 20; Mar. 1917.

Plant Immigrants in Our Parks and Gardens. Amer. Rose Annual; Oct. 1916.

Vines for California. L. H. Bailey. Standard Cyclopedia of Horticulture, vol. 5, pp. 2705–06; July 1916.

TORER, T. I., Assistant Curator of Birds, California Museum of Vertebrate Zoology.

Animal Life as an Asset of National Parks [with J. Grinnell]. Science, n.s., vol. 44, pp. 375–80; Sept. 15, 1916.

Bohemian Waxwing in Mariposa County. Condor, vol. 19, p. 103; June 1, 1917.

Care of Pamphlet Collections. Science, n.s., vol. 44, pp. 735–39; Nov. 24, 1916.

Diagnoses of Seven New Mammals from East-central California [with J. Grinnell]. Univ. Calif. Publ. Zoology, vol. 17, pp. 1–8, 1 fig.; Aug. 23, 1916.

Instance of Albinism in the Western Gopher Snake. Copeia, no. 35, pp. 74–76; Sept. 24, 1916.

Topographic Maps: a letter. Sierra Club Bull., vol. 10, no. 2, p. 338; Mar. 1917.

Vernacular Name of *Passer Domesticus* in North America. Condor, vol. 18, p. 202; Sept. 18, 1916.

Yosemite Cony; a Chapter in the Natural History of Yosemite National Park [with J. Grinnell]. Sierra Club Bull., vol. 10, no. 2, pp. 159-64, plate 49, figs. 1–3; Mar. 1917.

Stratton, G. M., Professor of Psychology.

Feminism and Psychology. Century Magazine, vol. 92, pp. 420–26; July 1916.

Mnemonic Feat of the 'Shass Pollak.' Psychological Rev., vol. 24, pp. 244–47; May 1917.

Theophrastus and the Greek Physiological Psychology before Aristotle. 227 pp.; London, Allen & Unwin; 1917.

Stricklen, E. G., Instructor in Music.

Chromatic Harmony. 53 pp.; privately printed; Dec. 1916.

Harmonic Structure [with C. L. Seeger]. 55 pp.; Berkeley, privately printed; Aug. 1916.

Sumner, F. B., Biologist in the Scripps Institution for Biological Research.

Rôle of Isolation in the Formation of a Narrowly Localized Race of Deer-Mice (Peromyscus). Amer. Naturalist, vol. 51, pp. 173–85; Mar. 1917.

Several Color ''Mutations'' in Mice of the Genus Peromyscus. Genetics, vol. 2, pp. 291–300; May 1917.

Swarth, H. S., Curator of Birds, California Museum of Vertebrate Zoology.

Geographical Variation in Sphyrapicus Thyroideus. Condor, vol. 19, pp. 62–65; Mar. 1917.

Sahuaro Screech Owl as a Recognizable Race. Condor, vol. 18, pp. 163–65; July 1916.

Sweet, W. L., Assistant in Pomology.

Preparation and Use of Oil Emulsions for Spraying. Univ. Calif. Jour. of Agric., vol. 4, pp. 228–29; Mar. 1917.

Taylor, E. R., Professor of Law and Dean of the Hastings College of the Law.

Law Reform. Illinois Law Rev., vol. 11, p. 402; Jan. 1917.

Taylor, R. H., Assistant Professor of Pomology.

Marketing California Almonds. Univ. Calif. Jour. of Agric., vol. 4, pp. 44–45; Oct. 1916.

Same. Pamphlet. San Francisco. Calif. Almond Growers' Exchange.

Teggart, F. J., Associate Professor of History.

Prolegomena to History. Univ. of Calif. Publ. Hist., vol. 4, no. 3, 140 pp.; 1916.

Thomas, E. E., Assistant Chemist, Department of Agriculture.

Irrigation Studies at Whittier. Calif. Citrograph, vol. 2, pp. 10–11; Jan. 1917; p. 26; Feb. 1917.

Thone, F. E. A., Secretary and Research Assistant to the Director, Scripps Institution for Biological Research.

Pioneer Plants on a New Levee, II. Proc. of the Iowa Academy of Science, vol. 23, pp. 423–26; 1916.

Traum, J., Assistant Professor of Veterinary Science.

Combined and Follow-up Systems of Tuberculin Testing [with G. H. Hart]. Jour. of the Amer. Veterinary Medical Assoc., n.s., vol. 3, pp. 189–213; Nov. 1916.

True, G. H., Professor of Animal Husbandry.

Animal Husbandry as Taught at the State Farm. Sacramento Valley Monthly, vol. 6, p. 4; Jan.–Feb. 1917.

Bullock Champions from California. Breeder's Gazette, vol. 70, pp. 11–12; Jan. 4, 1917.

Grand Champion at the International. System on the Farm; Jan. 1917.

How the Grand Champion Steer Was Fed. Pacific Rural Press, vol. 92, p. 745; Dec. 20, 1916.

The Milch Goat in California. Country Gentleman; Mar. 1917.

The Show at Sacramento. Breeder's Gazette, vol. 70, pp. 600–01; Oct. 5, 1916.

Tucker, R. H., Astronomer, Lick Observatory.

The Cordoba Durchmusterung. Popular Astronomy, vol. 25, pp. 359–71; June 1917.

Delicate Earth Tremors. Publ. of the Astronomical Soc. of the Pacific, vol. 28, p. 212; Aug. 1916.

Modern Positions of Astronomische Gesellschaft Stars. Lick Observatory Bull., vol. 9, no. 283, pp. 17–21; Sept. 1916.

Probable Errors in Meridian Circle Observations. Publ. of the Astronomical Soc. of the Pacific, vol. 29, June 1917.

The Refraction at Mount Hamilton. Lick Observatory Bull., vol. 9, no. 292, pp. 56–63; May 1917.

VAILE, R. S., Assistant Professor of Orchard Management.

Covercrops and Green Manure Crops. Calif. Cultivator, vol. 47, pp. 207–08; Sept. 1916.

Covercrops as Related to Orchard Management. Calif. Citrograph, vol. 1, p. 4; Aug. 1916.

Handling the Green Manure Crop in the Spring. Calif. Cultivator, vol. 48, p. 123; Feb. 1917.

Irrigation Studies. Chaffey Union High School Bull., vol. 1, 8 pp.; Jan. 1917.

New Device for Furrowing-out Orchards. Univ. Calif. Jour. of Agric., vol. 4, p. 32; Sept. 1916.

Organic Material for Orchards. Calif. Cultivator, vol. 47, p. 460; Nov. 1916.

Present Outlook for the Pomelo in California. Monthly Bull. of the Calif. State Comm. of Horticulture, vol. 6, pp. 21–22; Jan. 1917.

Records and Accounts for Citrus Groves. Calif. Citrograph, vol. 2, pp. 7–8; May 1917.

Some Factors in Citrus Culture. Rural World, vol. 2, pp. 12–13; Jan. 1917.

Some Notes on Frost Protection in Orange Groves. Calif. Citrograph, vol. 2, pp. 10–11, 16; Apr. 1917.

Windbreaks. Calif. Cultivator, vol. 47, p. 652; Dec. 1916.

VAN DYKE, E. C., Assistant Professor of Entomology.

New Species of Buprestidae (Col.) from the Pacific States, with Notes concerning a Few Others. Entomological News, vol. 27, pp. 405–12; Nov. 1916.

New Species of the Genus Anthophilax Lec. (Col.). Jour. of the New York Entomological Soc., vol. 25, no. 1, pp. 36–37; Mar. 1917.

Supplementary Notes and Descriptions of North American Ostomidae, Cleridae, and Cossonus (Col.). Bull. of the Brooklyn Entomological Soc., vol. 11, no. 4, pp. 71–79; Oct. 1916.

VAN NORMAN, H. E., Professor of Dairy Management, Vice-Director of Agriculture Experiment Station and Dean of University Farm School.

The Banker and the Farm School Student. Annual Report of the Calif. Bankers' Assoc.; 1917.

Same. Coast Banker, vol. 18, no. 6, p. 46; June 1917.

Employment of Students. Univ. Calif. Jour. of Agric., vol. 4, no. 7, p. 265; Apr. 1917.

First Yearly Jersey Records. Jersey Bull. and Dairy World, vol. 36, no. 9, p. 306; Feb. 28, 1917.

Gold Medal Class. *Ibid.*, vol. 36, no. 6, pp. 198–99; Feb. 7, 1917.

National Dairy Show. Annual Report of the International Assoc. of Dairy and Milk Inspectors, vol. 5, pp. 37–44; 1916.

University Farm School. San Francisco Weekly Chronicle; Dec. 20, 1916.

VON HUNGEN, M. J., Assistant in German.

Californiens Geschichte. Calif. Staatskalender, pp. 161–82; Jan. 1917.

Die Navajo Indianer. *Ibid.*, pp. 185–90; Jan. 1917.

WALKER, E. L., Associate Professor of Tropical Medicine.

Treatment of Carriers of *Ent-Amoeba Histolytica* with Oil of Chenopodium. Jour. of the Amer. Medical Assoc., vol. 68, pp. 1456–57; May 1917.

WASHBURN, H. L., Farm Management Demonstrator.

Farm Business Record. Univ. Calif. Press; Jan. 1917.

WASTENEYS, H., Associate Professor of Pharmacology.

Re-examination of the Applicability of the Bunsen-Roscoe Law to the Phenomena of Animal Heliotropism. Jour. of Experimental Zoology, vol. 22, pp. 187–92; Jan. 1917.

WATERMAN, T. T., Assistant Professor of Anthropology.

Ancient Mexicans, Their Religion and Life. Southern Workman; Mar. 9, 1917.

Bandelier's Contribution to the Study of Ancient Mexican Social Organization. Univ. Calif. Publ. Amer. Archaeology and Ethnology, vol. 12, p. 33; Feb. 1917.

WEBBER, H. J., Professor of Plant Breeding, Director of Citrus Experiment Station, and Dean of the Graduate School of Tropical Agriculture.

Avocado Industry and the Avocado Association. Annual Report of the Calif. Avocado Assoc., 1916, pp. 55–67; Mar. 1917.

Comparison of Florida and California Citrus Industries. Calif. Citrograph, vol. 1, no. 11, p. 2; Aug. 1916.

Development of the Citrus Experiment Station. *Ibid.*, vol. 1, no. 10, p. 16; July 1916.

Do Fertilizers Influence the Composition of Oranges? *Ibid.*, vol. 2, no. 6, p. 17; Apr. 1917.

How to Lay Out an Experiment in Horticulture. Proc. of the Amer. Soc. for Horticultural Science, 1916, pp. 116–19; Mar. 1917.

Lecture: Breeding of Horticultural Crops. Proc. of Texas Farmers' Congress, Bull. of the Agric. and Mechanical College of Texas, vol. 3, no. 7, pp. 26–31; Apr. 1917.

Lecture: Methods of Plant Breeding. *Ibid.*, vol. 3, no. 7, pp. 13–17; Apr. 1917.

Lectures: Variation and Its Causes; Hybridization and the Laws of Heredity; Improvement of Plants by Selection; Improvement of Plants by Bud Selection. Proc. of the Seventh Annual Farmers' Short Course, Bull. of the Agric. and Mechanical College of Texas, vol. 3, no. 7, pt. 2, pp. 1–23; Apr. 1917.

Planting Plans for an Avocado Orchard. Annual Report of the Calif. Avocado Assoc., 1916, pp. 157–60; Mar. 1917.

Weber, H. J., Associate Professor of German.

Bedeutungslehre und Bedeutungswandel im Deutschen. Proc. of the Calif. State High School Teachers' Assoc., Sierra Educational News, vol. 12, no. 8, pp. 134–39; Aug. 1916.

Weeks, A., Instructor in Surgery.

Congenital Pyloric Stenosis. Calif. State Jour. of Medicine, vol. 14, p. 317; Aug. 1916.

Same. International Abstract of Surgery, vol. 24, no. 1, p. 22; Jan. 1917.

Traumatic Rupture of the Stomach with Recovery. Jour. of the Amer. Medical Assoc., vol. 67, p. 1294; Oct. 28, 1916.

Weeks, W. S., Associate Professor of Mining.

Correction Chart for a 500-foot Tape. Mining and Scientific Press, vol. 114, pp. 702–03; May 1917.

Effective Oil Filter. Engineering and Mining Jour., vol. 102, p. 711; Oct. 1916.

Graphical Method for Correcting Steel Tapes. Univ. Calif. Publ. Engineering, vol. 1, pp. 261–68; Sept. 1916.

Same. Mining and Scientific Press, vol. 113, pp. 625–27; Oct. 1916.

Launching the Yuba No. 16. *Ibid.*, vol. 113, pp. 872–73; Dec. 1916.

Measuring with the Steel Tape in Mine Surveying. *Ibid.*, vol. 113, pp. 668–70; Nov. 1916.

Prevention of Misfires. *Ibid.*, vol. 114, p. 12; Jan. 1917: vol. 114, p. 296; Mar. 1917.

Review: White. *Methods of Metallurgical Analysis. Ibid.*, vol. 113, p. 580; Oct. 1916.

Socketing a Wire Rope. *Ibid.*, vol. 114, p. 609; May 1917.

Weir, W. W., Drainage Expert.

Preliminary Report on Kearney Vineyard Experimental Drain. Univ. Calif. Agric. Exp. Sta. Bull. no. 273, pp. 103–23; Nov. 1916.

Too Much Irrigation. Bulletin, California State Prison, San Quentin, vol. 4, nos. 3 and 4, pp. 4–5; Jan. 1917.

Wheeler, B. I., President of the University.

Convocation Proceedings of the University of the State of New York. Proc. of the Fifty-second Convocation of the Univ. of the State of N. Y., pp. 208–09.

Enforcing the Recognition of Justice. Address before the League to Enforce Peace in Washington, D. C., May 27, 1916. Enforced Peace, pp. 180–83.

Message to the Daily Californian. Daily Californian, vol. 48, no. 1; Aug. 18, 1916.

Whipple, G. H., Professor of Research Medicine.

Animal Experimentation and Medical Progress: an Argument in Support of a Bill now before the State Legislature. Calif. State Jour. of Medicine, vol. 15, pp. 68–70; Mar. 1917.

Bile Pigment Metabolism.

III. Bile Pigment Output and Blood Feeding [with C. W. Hooper]. Amer. Jour. of Physiology, vol. 42, pp. 256–63; Jan. 1917.

IV. Influence of Fresh Bile Feeding upon Whole Bile and Bile Pigment Secretion [with C. W. Hooper]. *Ibid.*, vol. 42, pp. 264–79; Jan. 1917.

VI. Bile Pigment Output Influenced by the Eck Fistula [with C. W. Hooper]. *Ibid.*, vol. 42, pp. 544–57; Mar. 1917.

VII. Bile Pigment Output Influenced by Hemoglobin Injections, Anemia and Blood Regeneration [with C. W. Hooper]. *Ibid.*, vol. 43, pp. 258–74; May 1917.

VIII. Bile Pigment Output Influenced by Hemoglobin Injection: Splenectomy and Anemia [with C. W. Hooper]. *Ibid.*, vol. 43, pp. 275–89; May 1917.

IX. Bile Pigment Output Influenced by Hemoglobin Injection in the Combined Eck-Bile Fistula Dog [with C. W. Hooper]. *Ibid.*, vol. 43, pp. 290–97; May 1917.

Intestinal Obstruction. VI. A Study of Non-coagulable Nitrogen of the Blood [with J. V. Cooke and F. H. Rodenbaugh]. Jour. of Experimental Medicine, vol. 23, pp. 717–38; June 1916.

Proteose Intoxications and Injury of Body Protein:

I. Metabolism of Fasting Dogs Following Proteose Injections [with J. V. Cooke]. *Ibid.*, vol. 25, pp. 461–77; Mar. 1917.

II. Metabolism of Dogs with Duodenal Obstruction and Isolated Loops of Intestine [with J. V. Cooke and Dr. Stearns]. *Ibid.*, vol. 25, pp. 479–94; Mar. 1917.

Studies on the Blood Proteins. II. Albumin-Globulin Ratio in Experimental Intoxications and Infections [with S. H. Hurwitz]. *Ibid.*, vol. 25, pp. 231–53; Feb. 1917.

Whitney, J. L., Instructor in Medicine.

Acidosis: a Summary of Recent Knowledge. Boston Medical and Surgical Jour., vol. 176, pp. 225–31; 1917.

Co-operative Medicine in Relation to Social Insurance. Calif. State Jour. of Medicine; Nov. 1916.

Wickson, E. J., Professor of Horticulture, Emeritus.

Barley, California's Greatest Grain. Pacific Rural Press; Jan. 6, 1917.

California Nurserymen of the First Decade. *Ibid.;* Nov. 18, 1916.

California's Thirst for Tractors. *Ibid.,* Aug. 19, 1916.

Corn in California. *Ibid.;* Feb. 17, 1917.

The Dairy: an American Gift to California. *Ibid.;* Sept. 16, 1916.

How Ornamental Exotics Came to California. *Ibid.;* Oct. 28, 1916.

The Nectarine in California. *Ibid.;* June 15, 1916.

Six Decades of California Fairs. *Ibid.;* Aug. 26, 1916.

Sorghum a California Pioneer. *Ibid.;* Mar. 10, 1917.
Swine in California. *Ibid.;* Apr. 7, 1917.
What Fruits Should California Grow? *Ibid.;* Sept. 30, 1916.
What Sheep Did for California. *Ibid.;* June 10, 1916.

Wiley, H. R., Lecturer on Pharmacal Jurisprudence.
Dust and Flame. New York, Dodge Pub. Co.; 1917.

Woll, F. W., Professor of Animal Nutrition.
Feed Manual and Notebook. 137 pp.; Philadelphia, J. B. Lippincot Co.; 1917.
Productive Feeding of Farm Animals. 2nd ed. rev. 12+385 pp.; Phil delphia, J. B. Lippincott Co.; 1916.

Woods, B. M., Professor of Theoretical Mechanics.
Review: Hudson. *Ruler and Compasses.* Amer. Mathematical Monthl vol. 24, no. 6; June 1917.

Wright, A. T., Associate Professor of Law.
Undisclosed Principal in California. Calif. Law Rev., vol. 5, pp. 183–98 Mar. 1917.

Wright, H. W., Voluntary Assistant in Orthopedic Surgery.
Case Reports Showing Need of Mental Analysis. Northwest Medicin vol. 4; Apr. 1917.
Obstetrical Paralysis. New York Medical Jour., vol. 12; Apr. 28, 191
Remote Effects of Brain Injury. Calif. State Jour. of Medicine, vol. 12 June 1917.
Some Aspects of Treatment of Infantile Paralysis. New York Medic Record, vol. 11; Dec. 10, 1916.
Some Modern Phases of Psychology: Their Relation to Prevention Neurosis. *Ibid.*, vol. 12; Apr. 7, 1917.

Wright, W. H., Astronomer, Lick Observatory.
Quartz Spectrograph of the Lick Observatory and Some Observatio Recently Secured with It. Lick Observatory Bull., vol. 9, pp. 52–5 May 1917.

Wulzen, R., Instructor in Physiology.
The Pituitary Gland: Its Effect on the Growth and Fission of Planaria Worms. Jour. of Biological Chemistry, vol. 25, pp. 625–33; Jul 1916.

Yocom, H. B., Assistant in Zoology.
Some Phases of Spermatogenesis in the Mouse. Univ. Calif. Pub Zoology, vol. 16, pp. 371–80; Jan. 1917.

SUNDAY HALF-HOURS OF MUSIC IN THE GREEK THEATRE

July 2—Band of the California Grays.

July 9—Mr. Stephen N. Wyckoff, baritone; and Mr. Thomas Frederick Freeman, accompanist.

July 16—Annie Louise David, Harpist; Gabrielle Chapin-Woodworth, lyric soprano; Mildred Turner, accompanist.

July 23—Players' Club Trio: Bernice Sternberg, violinist; Gertrude Graham Adams, 'cellist; Alice Seckels, pianist; and Miss Emelie Nelson, coloratura soprano; Miss Alice Seckels, accompanist.

August 27—Shriners' Band of San Francisco.

September 3—Mansfeldt Club of San Francisco.

September 10—Miss Nellie Laura Walker, soprano; Miss Cecile von Seiberlich, accompanist; and Mr. Emil Joullin, accompanist.

September 17—Mr. William Augustus Benjamin, tenor, of New York City, assisted by Miss Beatrice Clifford, accompanist; and Miss Zhay Clark, harpist.

September 24—Mrs. William Gerritt Orton, soprano; Miss Margaret Cain, accompanist; and the Oakland Mandolin Orchestra, Mr. Joseph Wright, director.

October 1—The Beringer Musical Club: Miss Louise Cameron, pianist; Miss Irene De Martini, dramatic soprano; Mrs. Helen McKinlay, pianist; Miss Genevieve Holmberg, contralto; Miss Myrtle Dow, lyric soprano; Miss Zdenka Buben, pianist and accompanist.

October 8—Mrs. Dorothy G. Lilly, contralto; and Merton E. Titus, baritone.

October 15—Lorna Lachmund, coloratura soprano; Ralph H. Lachmund, basso; and Mrs. Robert M. Hughes, accompanist.

October 22—California Treble Clef Club and the Harmony Quartette of San Francisco.

October 29—Mrs. Dorothy G. Lilly, contralto; Mr. Merton E. Titus, baritone; and Mrs. Anna Werner-Doyal, pianist.

November 12—Miss Beatrice Sapiro, soprano; Miss Anne Newman, accompanist; Mr. Gilbert Reek, violinist; and Miss Beatric Clifford, accompanist.

March 11—Mr. Arthur Conradi, violinist.

March 18—Arthur Hackett, soprano; Miss Eva Walker, accompanist; Mis Elsie Cook, pianist.

March 25—

April 1—Mr. Jack Edward Hillman, baritone; Mr. Walter F. Wenzel accompanist.

April 8—Easter services. (Under the auspices of the Berkeley Chamber o Commerce, conducted by the Grand Commandery of Knight Templar of the State of California, and the commanderie of San Francisco, Oakland, and Berkeley; musical number rendered by the University Glee Club, the De Koven Clu a massed band of seventy-five, and the Trumpeters fro California Commandery, No. 1.)

April 15—University of California Cadet Band.

April 22—Mrs. Maud Godelia Magee, contralto; Miss Zhay Clark, harpist Mr. Arthur Young, violinist; Mrs. Claire Bailey Derrima accompanist.

April 29—Kajetan Attl, solo harpist of the San Francisco Symphon Orchestra.

UNIVERSITY MEETINGS

Aug. 21—President Benjamin Ide Wheeler.

Sept. 1—Aurelia Henry Reinhardt, Ph.D., President of Mills College.
David Prescott Barrows, Ph.D., Professor of Political Science and Dean of the Faculties.
Music: University Cadet Band.

Sept. 4—Wm. J. French, Industrial Accident Commissioner.
Col. Harris Weinstock, State Market Director. (Labor Day Meeting.)

Sept. 8—William J. Hayes, '09, Chairman of the History Committee, N.S.G.W.
Owen C. Coy, Ph.B., M.A., Secretary of the California Historical Survey Commission. (Admission Day Meeting.)

Sept. 15—Lincoln Hutchinson, Professor of Commerce on the Flood Foundation.
Willis L. Jepson, Associate Professor of Dendrology.
Frank H. Probert, Professor of Mining.
Music: University of California Glee Club.

Oct. 13—Paul Shorey, Ph.D., LL.D., Litt.D., Professor of Greek, University of Chicago, Sather Professor of Classical Literature in the University of California.
Mary Whiton Calkins, M.A., LL.D., Litt.D., Professor of Philosophy and Psychology, Wellesley College, Lecturer in Philosophy on the Mills Foundation.

Oct. 24—Cassius Jackson Keyser, Ph.D., Adrain Professor of Mathematics, Columbia University; Exchange Professor of Mathematics, University of California.
Rev. F. W. Clampett, D.D., Pastor of Trinity Episcopal Church, San Francisco.
Lieutenant Zenoir Peckhoff, of the Foreign Legion.
Music: Piano solo by Miss Sarah Unna, '18.

Nov. 17—Bartlett L. Thane, '99.
Milton H. Schwartz, '01.
Ralph P. Merritt, '07.
Herman H. Phleger, '12.
John A. Stroud, Jr., '13.
Willis R. Montgomery, '17.
Music: The University Cadet Band. (Big Game Meeting.)

Jan. 19—Frederick James Eugene Woodbridge, LL.D., Dean of the Faculties, of Political Science, Philosophy, Pure Science, and Fine Arts, Columbia University; Lecturer in Philosophy on the Mills Foundation.
Robert Andrews Millikan, Ph.D., Sc.D., Professor of Physics. University of Chicago; Lecturer on the Hitchcock Foundation.
Music: University of California Glee Club.

Feb. 2—Professor Albert Van Hecke, of Louvain University, Delegate of the Belgian Government to the Camps of Belgian Refugees in Holland.
Miss Mary E. McDowell, Director of the University of Chicago Settlement.
Zenovi Peckhoff, Lieutenant in the French Foreign Legion.
Music: Vocal solo by Miss Evelyn Farrar, '18; Lulu Rubke, '12 accompanist.

Feb. 16—Gordon J. Laing, Ph.D., Professor of Latin, University of Chicago; Lecturer on the Sather Foundation.
C. J. Carey, '17, Chairman of the Student Welfare Committee
Carlton J. H. Hayes, Ph.D., Associate Professor of History Columbia University; Acting Professor of History.
Music: The California Trio.

Mar. 2—Major General J. Franklin Bell, Commander Western Department, United States Army.
Music: Kenneth M. Morse, '19, baritone; E. W. Roberts, '18, accompanist.

Mar. 16—Dr. Leonard C. Van Noppen, Queen Wilhelmina Lecturer t Columbia University.
Frederick Parker Gay, M.D., Professor of Pathology.
Music: The University Cadet Band.

Mar. 30—Thomas Harrison Reed, City Manager of San Jose.
C. G. Chinard, Professor of French.
E. E. Southard, Bullard Professor of Neuropathology, Harvar University; Director of Boston Psychopathic Hospital.
Music: M. J. Frumkin, '19, violinist.

Apr. 13—Members of the Class of 1917:

Anna Frances Barrows
Stephen Sears Barrows
Leila Baldwin Berry
George Washington Cohen
Henry Raymond Hogaboom
Willis Robert Montgomery
Donna Moses
Luther Allen Nichols
Harry Boyd Seymour
Roy Starbird
Floyd Wayne Stewart
John James Vandenburgh
Imra Margaret Wann
Frank Howard Wilcox
John L. Reith, '18

Music: Violin solo, Felix J. Jonas, '17; accompanist, I. B. Kornblum, '17.

SECRETARY OF THE REGENTS

University of California,
Berkeley, July 1, 1917.

To the Honorable Board of Regents
of the University of California:

Gentlemen: I have the honor of presenting the following Secretary's Report for the year ending June 30, 1917.

Respectfully submitted,

Victor H. Henderson,
Secretary of the Regents.

REGENTS OF THE UNIVERSITY, 1916–17

REGENTS EX OFFICIO

His Excellency William Dennison Stephens	*Governor and ex officio President of the Regents*	Sacramento
	Lieutenant-Governor	
Clement Calhoun Young, B.L.	*Speaker of the Assembly*	276 Post Street, San Francisco
Hon. Edward Hyatt, B.S.	*State Superintendent of Public Instruction*	Sacramento
Hon. John M. Perry	*President of the State Agricultural Society*	10 West Weber Avenue, Stockton
Livingston Jenks, A.B., LL.B.	*President of the Mechanics' Institute*	Mechanics' Institute Bldg., San Francisco
Benj. Ide Wheeler, Ph.D., LL.D., Litt.D., L.H.D.	*President of the University*	California Hall, Berkeley

APPOINTED REGENTS

The term of the appointed Regents is sixteen years, and terms expire March 1 of the year indicated. The names are arranged in the order of original accession to the Board.

Isaias William Hellman, Esq.	Wells, Fargo-Nevada National Bank, San Francisco	1918
Mrs. Phoebe Apperson Hearst	Pleasanton. Business address: 410 Hearst Building, San Francisco	1930
Arthur William Foster, Esq.	1210 James Flood Building, San Francisco	1932
Garrett Willliam McEnerney, Esq.	2002 Hobart Building, San Francisco	1920
Guy Chaffee Earl, A.B.	14 Sansome Street, San Francisco	1918
Rudolph Julius Taussig, Esq.	Main and Mission Streets, San Francisco	1932
James Wilfred McKinley, B.S.	706 Security Building, Los Angeles	1922
John Alexander Britton, Esq.	445 Sutter Street, San Francisco	1930
Charles Stetson Wheeler, B.L.	Nevada Bank Building, San Francisco	1928
William Henry Crocker, Ph.B.	Crocker National Bank, San Francisco	1924
Philip Ernest Bowles, Ph.B.	American National Bank, San Francisco	1922
James Kennedy Moffitt, B.S.	First National Bank, San Francisco	1924
Rev. Charles Adolph Ramm, B.S., M.A., S.T.B.	1100 Franklin Street, San Francisco	1928
Edward Augustus Dickson, B.L.	1631 Cimarron Street, Los Angeles	1926
James Mills, Esq.	Hamilton City, California	1926
Chester Harvey Rowell, Ph.B.	Fresno, California	1920

OFFICERS OF THE REGENTS

HIS EXCELLENCY WILLIAM DENNISON STEPHENS..........................Sacramento
President
RALPH PALMER MERRITT, B.S..........................220 California Hall, Berkeley
Comptroller
VICTOR HENDRICKS HENDERSON, B.L...............104 California Hall, Berkeley
Secretary
MORTIMER FLEISHHACKER....Anglo-California Trust Company, San Francisco
Treasurer
WARREN OLNEY, JR., A.B., LL.B...Merchants' Exchange Bldg., San Francisco
Counsel

STANDING COMMITTEES OF THE REGENTS FOR 1916–17*

Finance: Regents Earl, Foster, Britton, Moffitt, Taussig, and as Member Emeritus, Regent Hellman.

Grounds and Buildings: Regents Britton, Mrs. Hearst, Jenks, Bowles, and C. S. Wheeler.

Medical Instruction: Regents Crocker, Moffitt, Ramm, Dickson, and Taussig.

University Hosptial: Regents Crocker, Taussig, Britton, Earl, and Moffitt.

Agriculture: Regents Foster, Dickson, Jenks, Mills, and Perry; Regent Bowles, alternate.

Lick Observatory: Regents Ramm, Crocker, McEnerney, and Young.

Curriculum and Degrees: Regents Rowell, Moffitt, and C. S. Wheeler.

Wilmerding School: Regents Taussig, Earl, and Moffitt.

Scripps Institution for Biological Research: Regents Dickson, McKinley, and Hyatt.

Executive Committee: This committee consists of the chairmen of all the other committees.

SPECIAL COMMITTEES OF THE REGENTS DURING 1916–17*

Committee on Committees for 1917–18: Regents Earl, Britton, Dickson, Moffitt, and Taussig.

STANDING COMMITTEES OF THE REGENTS FOR 1917–18*

Finance: Regents Earl, Foster, Britton, Moffitt, Taussig, and as Member Emeritus, Regent Hellman.

Grounds and Buildings: Regents Britton, Mrs. Hearst, Jenks, Bowles, and C. S. Wheeler.

Medical Instruction: Regents Crocker, Moffitt, Ramm, Dickson, and Taussig

University Hospital: Regents Crocker, Taussig, Britton, Earl, and Moffitt

Agriculture: Regents Foster, Dickson, Jenks, Mills, and Perry; Regent Bowles, alternate.

Lick Observatory: Regents Ramm, McEnerney, Young, and Crocker.

Curriculum and Degrees: Regents Rowell, Moffitt, and Bowles.

Wilmerding School: Regents Taussig, Earl, and Moffitt.

Scripps Institution for Biological Research: Regents Dickson, McKinley and Hyatt.

Executive Committee: This committee consists of the chairmen of all th other committees.

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* The President of the Board of Regents and the President of the University ar ex officio members of all committees of the Board. In each committee the name o the chairman appears first and the name of the vice-chairman second.

Memorial Resolutions:

January 9, 1917, President Wheeler was requested by the Regents to prepare fitting memorials for the death of Professor Howison and of Mr. Albert Bonnheim, founder of the Bonnheim Scholarships. These memorials, as spread on the minutes of the Board of February 13, 1917, were as follows:

It is with much regret that I have to report the death on December 31, 1916, of George Holmes Howison, formerly Mills Professor of Intellectual and Moral Philosophy and Civil Polity. I recommend that the Board of Regents of the University of California adopt the following resolution:

> WHEREAS, on December 31, 1916, died George Holmes Howison, for a quarter of a century Mills Professor of Intellectual and Moral Philosophy and Civil Polity—his life goes on, however, in the life of the University of California, for on every hand things in the University are what they are because of him and by him—now, therefore be it
>
> RESOLVED, That the Regents of the University of California express the respect and gratitude with which they remember the long lifetime of service to the noblest aspirations of the human spirit of this great soul, this firm and fixed character, whose life could not be in a community life without shaping that community life. So has he wrought, and he lives here among us.

It is with regret that I have to report the death on December 23, 1916, of Mr. Albert Bonnheim, and I recommend that the following resolutions be adopted:

> WHEREAS, Albert Bonnheim, staunch and kindly friend of youth, generous benefactor of the University of California, and honored member of the community, has come to the end of his days, now, therefore be it
>
> RESOLVED, That the Regents of the University of California express their sympathy with his family in the loss which they and the whole community have suffered.

Death of Professor Stubenrauch:

February 13, 1917, President Wheeler reported to the Regents the death, on February 12, in Berkeley, of Arnold Valentine Stubenrauch, '99, since 1914 Professor of Pomology, and previously Pomologist in the U. S. Department of Agriculture for a number of years.

Death of Dr. William Watt Kerr:

May 8, 1917, President Wheeler reported to the Regents the death on April 26, 1917, in San Francisco, of Dr. William Watt Kerr, Clinical Professor of Medicine.

Death of Professor C. A. von Hoffman:

June 12, 1917, President Wheeler reported to the Regents the death in San Francisco on May 14, 1917, of Dr. C. A. von Hoffman, Professor of Gynecology, Emeritus, and since May 12, 1892, a member of the faculty of the University of California Medical School.

Death of George Leslie Albright:

February 13, 1917, President Wheeler reported to the Regents the death in Seville, Spain, on December 15, 1916, of George Leslie Albright, '14, Native Sons Travelling Fellow in History.

Resolutions on the Death of Mrs. Boalt:

February 13, 1917, President Wheeler reported the death on February 10, 1917, of Elizabeth Josselyn Boalt, the widow of Judge John H. Boalt, donor of Boalt Hall of Law and founder of the Elizabeth Josselyn Boalt Professorships in the School of Jurisprudence, and upon his motion the following resolutions were adopted by the Board:

WHEREAS, in Santa Barbara, on February tenth, there came an end to the life of Elizabeth Josselyn Boalt, for half a century a member of the San Francisco community, a model of all the womanly virtues, friend of youth, and loyal and devoted wife, who had fitting influence and inspiration in her honored husband's distinguished career as a member of the San Francisco Bar, now, therefore, be it

RESOLVED, That the Regents of the University of California express their sorrow at the loss which the community has suffered in her death.

The Howison Foundation:

August 8, 1916, the Regents formally accepted the generous provision made by Professor and Mrs. George H. Howison for the endowment of the Howison Foundation, through approval of the following recommendations of the Finance Committee, as spread upon the minutes of the Board:

We have the pleasure of reporting that in a letter of July 14, 1916, addressed to the Regents of the University of California, George H. Howison, Professor Emeritus of Philosophy in the University of California, and Lois T. Howison, his wife, have offered to create the Howison Foundation, for the endowment of various excellent University purposes, the trust being subject to certain annuity features and the details being set forth in the following letter:

"BERKELEY, CALIFORNIA, July 14, 1916.

"TO THE REGENTS OF THE UNIVERSITY OF CALIFORNIA,

"Gentlemen:

"The undersigned, husband and wife, mindful of their advancing age and of the long and satisfying years they have passed in connection with the University, and impressed by the fidelity and skill, especially in financial administration, which your Board has constantly displayed in its management of the University affairs, and having no descendants, hereby agree to convey to you the following described property, upon your promise to accept the same and perform the trusts hereinafter mentioned.

"The following is a general description of the property:

"First: That certain real property situate in the City of Berkeley, County of Alameda, State of California, now occupied by us as a homestead, and particularly bounded and described as follows:

"Beginning at a point on the east line of Piedmont Avenue (formerly Mark Street) one hundred and sixty (160) feet north of the north line of Derby Street (formerly Russ Street); running thence northerly along the said line of Piedmont Avenue one hundred and fifty (150) feet; thence at right angles easterly one hundred and thirty-five (135) feet; thence at right angles southerly one hundred and fifty (150) feet; thence at right angles westerly one hundred and thirty-five (135) feet, to the point of beginning; being the southerly portion of Lot six (6) and the northerly part of Lot 7, in Block 6, as delineated on that certain map entitled 'Map of the Property of John Kearney, near the State University,' filed September 12, 1876, in Liber 5 of Maps, page 22, in the office of the County Recorder of Alameda County.

''The said real property is community property.

''Second: Personal property, consisting of the securities listed below, viz: [Here follows a list of twelve bonds of the par value of $10,000, constituting community property, and a list of forty bonds of a par value of $40,000 given as separate property of Mrs. Howison.]

''In consideration of our conveying the entire foregoing described property to you, we desire you to agree to perform the following trusts:

''*Article One*

''Said property so conveyed and delivered to you shall be kept by you as the principal of a fund to be known as the 'Howison Foundation.' You are to have unrestricted liberty to sell said securities and invest and reinvest the proceeds thereof, collect the income therefrom, and the principal when due, and in all respects to be the absolute owner of the same; but provided, that as long as either one of us survives, the real property above described shall not be disposed of by you, except with our advice and consent, or that of the survivor, but shall be used as stated in Article Three hereof; and provided, further, that you will maintain the capital of said Foundation undiminished, and devote its income, and its income only, to the purposes hereinafter indicated.

''*Article Two*

''You are to pay to us during our joint lives, and to the survivor of us, for the term of the natural life of such survivor, the sum of two hundred and twenty-five dollars ($225.00) on the first day of each calendar month, commencing with August of the present year.

''*Article Three*

''You are to permit us to occupy the real property above described as and for our home during our joint lives, and as the home of the survivor as long as he or she shall live, free and clear of all charges of any kind or character, and with the privilege on our part of placing a tenant or a caretaker therein, upon our occasional absence, and of making, at our own expense, alterations or improvements, or both, in the present buildings thereon, or additional improvements on the property; provided that such occupancy may cease at our request, or that of the survivor, upon notice duly given.

''The cost of insuring said premises we agree to pay from our own funds, but the policies shall be in the name of your Board or of ourselves, as the insurance companies issuing them may require, and the amount of the insurance shall be as much as six thousand dollars. In the event that any money is paid on account of loss under the insurance, if the payment is made to us we will apply the same to rebuilding or repairing said property; if the said insurance money is paid to you, then the amount thereof is to be applied by you in repairing or rebuilding the said premises, the object being to secure to us, and to the survivor of us, a comfortable home during the remainder of our lives and the life of the survivor.

"*Article Four*

"Any remainder from the income of said property after the payment of the monthly allowance provided for in Article Two hereof, up to the amount of six hundred dollars ($600) per annum, shall be the beginning of an allowance, to be known in commemoration of Mrs. Howison's maiden name, as 'The Lois Caswell Fund for the Dean of Women,' for the aid of deserving women students of the University of California. Said sum of six hundred dollars ($600) per annum shall, when fully established, be allotted by you each year to such students, and in such several amounts, as the said Dean of Women may recommend.

"Provision is hereinafter made for the completion, and the possible increase, of this allowance, after the death of the annuitants hereinafter mentioned.

"*Article Five*

"As soon as there is any excess of the annual income from said 'Howison Foundation' above what is hereinbefore appropriated, then you are to set apart the remainder of said income, up to the amount of twelve hundred dollars per annum, for founding in the Department of Philosophy at the University of California a travelling fellowship, to be known as 'The Howison Fellowship,' open to such students in the graduate school as shall have taken their B.A. degree, whether at the University of California or at some other of equal rank, with honors in Philosophy, and who shall show upon careful investigation by the department professors mentioned below that they are thoroughly grounded in Mathematics, Physics, Chemistry, and Biology, and possess a free reading command of Greek, Latin, German, and French. The fellowship is to be held by each appointee for three years, one or more of which may be spent at some other university approved by the Mills Professor and his department colleagues of full professorial rank, who shall also select and recommend to your Board the candidate to receive the appointment and shall fix the conditions of the fellowship in respects not herein mentioned, subject to the general regulations of the University Council and the Academic Senate.

"*Article Six*

"After satisfying the provisions hereinbefore stated, you are to devote the interest on two thousand dollars of the Foundation for annual payments to maintain beds in the Infirmary of the University of California.

"*Article Seven*

"From and after the death of the survivor of us you are to pay annuities to such of the persons hereinafter named as survive us, as follows, to wit:

"(*a*) To pay to each of Mrs. Howison's three nieces, to wit: Miss Anne Sampson Lane, Miss Serena Caswell Lane, both now residing at No. 121 Butler Street, Lawrence, Massachusetts, and to Mrs. Mary Lois (Lane) Scribner, wife of Arthur W. Scribner, now residing at No. 10 Pearl Street, Lawrence, Massachusetts, an annuity of four hundred dollars each; said payments to be made quarterly in installments of one hundred dollars to each of said nieces, on the first days of January, April, July, and October of each year. The present ages of said nieces are 59, 57, and 47, respectively. Payments to terminate at the death of the party entitled thereto while living.

"(*b*) To pay, during their lives, in quarterly installments of fifty dollars to each, on the first days of January, April, July, and October of each year, an annuity of two hundred dollars to Mrs. Nellie McCauslin Browning, widow, grandniece of Mr. Howison's mother, now residing at No. 707 East Capitol Street, Washington, D. C., and to Miss Mollie McCauslin, also a grandniece of Mr. Howison's mother, now residing at No. 710 East Capitol Street, Washington, D. C., a like annuity of two hundred dollars ($200).

"*Article Eight*

"Upon the death of the survivor of us, or sooner, should the homestead be surrendered as above provided in Article Three, you are to sell said real property and invest the proceeds of sale to the best of your discretion, and said proceeds shall become a part of said Howison Foundation. The entire capital sum thus established for the said Foundation you are to maintain permanently, undiminished, and are to use for the purposes of the Foundation the income only, as already provided in Article One.

"*Article Nine*

"As the income from said Foundation increases, by the death of the annuitants, or by other causes, you are to devote such increase, *first,* to completing the support of the 'Lois Caswell Fund for the Dean of Women' to the extent of six hundred dollars ($600) per annum, as stated in Article Four, or to a further extent if that should appear to you necessary and judicious; *next,* to the completion, if it is not yet effected, of the income on the two thousand dollars of the Foundation, set apart for the Infirmary beds in Article Six; *next,* to the establishment, in the Department of English in the University, of scholarships or fellowships, three or four in number, to be known as the Anne Sampson Scholarships or Fellowships, in honor of Mrs. Howison's mother, open to women students in such studies of English Literature and Criticism as the chief professor in the English Department and his principal associates may determine, the appointees to be selected and nominated to your Board by the said professors, each appointment to carry an annual stipend of from three hundred to four hundred dollars ($300 to $400), and the mentioned professors to fix the conditions under which the appointments may be held, subject to the regulations of the University Council and the Academic Senate; *next,* to raise the annual stipend pertaining to the Travelling Fellowship in Philosophy from twelve hundred dollars ($1200) per annum to fifteen hundred dollars ($1500) per annum; and, *finally,* any remaining surplus to the general uses of the Department of Philosophy, in such allotments as the Mills Professor and his department colleagues of full professorial rank may advise; provided, that such allotments to the department shall always be additional to its support from other sources, and in no case a substitute therefor.

"*Article Ten*

"Should there remain in any year a surplus of the income, owing either to non-use in the Dean of Women's Fund or to vacancy in the Traveling Fellowship in Philosophy, or to both causes, such surplus is to be added to the general 'Howison Foundation,' to increase its capital. Should the fellowship fall into continual disuse, then the income provided for it is to be appropriated to the general uses of the Department of Philosophy, in such distribution as the Mills Professor and his department colleagues of full professorial rank may advise to your Board, subject to the concluding proviso in Article Nine.

''In the event that you are willing to accept the conveyance of the real property and the transfer of the personal property hereinbefore mentioned, upon the trusts and conditions herein contained, it is our wish that you spread this letter upon the minutes of your Board and adopt a resolution accepting the same and agreeing to perform the trusts. As soon as notified of your action in that respect, we will execute to you a deed of the real property hereinbefore described, and transfer to your Treasurer for you, the personal property hereinbefore listed.

''We beg, Gentlemen of the Board of Regents, to subscribe ourselves,

''Yours faithfully,

''(Signed) GEO. H. HOWISON,

''(Signed) LOIS T. HOWISON.

We recommend the adoption of the following resolutions:

''RESOLVED, That the Regents of the University of California accept the property offered to the Regents of the University of California in a letter of July 14, 1916, addressed to The Regents of the University of California by George H. Howison and Lois T. Howison, and be it futher

''RESOLVED, That The Regents of the University of California agree to perform the trusts therein mentioned, and be it further

''RESOLVED, That the Regents of the University of California express their deep appreciation of the generous spirit in which these donors have offered to create the Howison Foundation for the furtherance of the purposes of the University of California.''

In putting the vote the Chairman called the particular attention of the Board to the noble beneficence of Professor and Mrs. Howison, and stated that he voiced the sentiments of the whole Board in expressing the profound appreciation which the Regents felt in adopting the resolutions whereby the Board formally accepted the Howison Foundation and undertook the trusts provided for.

The Boalt Professorships:

March 13, 1917, President Wheeler reported to the Regents that with the death of Mrs. Boalt, her trustees, Charles Stetson Wheeler and Charles W. Slack, have been entrusted with the consummation of a plan first formed by Mrs. Boalt a decade ago of creating an endowment for the purposes of the School of Jurisprudence of the University, and that in due time they would make announcement to the Regents of the purposes and details of the trust eventually to be committed to the Regents. Property valued at approximately $200,000 is to come to the University for the endowment of the Elizabeth Josselyn Boalt Professorship or Professorships, this being in addition to Mrs. Boalt's original gift of $100,000 toward Boalt Hall of Law, a memorial to her husband, Judge John H. Boalt.

Chemists offer Patents as Endowment for Research:

June 12, 1917, President Wheeler reported that in a letter of May 8, 1917, Gilbert N. Lewis, Professor of Chemistry, had reported that thirty members of that department had volunteered to work throughout the summer on war problems presented to them by the national government and the State Council of Defense, and that all of these men had signed an agreement not to use any of the inventions or knowledge obtained in this work for private gain, but to assign the patents to the Regents, any proceeds to go into a special fund for scientific research. The Regents voted to provide the legal work necessary to take out and protect such patents as the Regents might wish to apply for and to pay the patent fees, in consideration of an arrangement that the title to such patents shall all vest in the Regents of the University of California.

School of Education:

September 12, 1916, it was reported that the State Superintendent of Public Instruction, Hon. Edward Hyatt, had transmitted resolutions adopted by the State Board of Education on June 19, 1916, heartily commending the establishment of the School of Education and of the degree of Graduate in Education, praising the work of Director Alexis F. Lange, urging the broadening of the scope of the School of Education, to include advanced courses in educational psychology, vocational education, and elementary education, and advocating that adequate financial provision be made by the Legislature for the development of the University High School for the training of high school teachers.

Amalgamation, Hahnemann Medical College:

September 12, 1916, and October 10, 1916, the Regents ratified the following agreement with the Hahnemann Medical College of the Pacific:

WHEREAS, The Regents are maintaining, as a part of the University of California, a medical school known as the University of California Medical School (hereinafter referred to as the University Medical School), for the giving of instruction in medicine and kindred subjects, the instruction so given in medicine at the present time being of the so-called allopathic or regular school, and the Hahnemann College is maintaining a medical school for the same purpose, the instruction in medicine therein being of the so-called homeopathic school; and

WHEREAS, it is desired by the parties hereto to merge the medical school of the Hahnemann College with the University Medical School and thereafter to have the latter give instruction of both the allopathic and the homeopathic schools of medicine, as the student may elect;

Now, therefore, it is agreed as follows, to wit:

I

The Hahnemann College shall forthwith convey to the Regents, free of encumbrance, all its real property, to wit: That certain piece or parcel of real property situate in the City and County of San Francisco, State of California, and particularly described as follows, to wit:

Commencing at the point of intersection of the southerly line of Sacramento Street with the westerly line of Maple Street; running thence southerly and along said line of Maple Street one hundred and thirty-two (132) feet seven and one-eighth (7⅛) inches; thence at right angles westerly eighty-seven (87) feet six (6) inches; thence at right angles northerly and parallel with Maple Street one hundred and thirty-two (132) feet seven and one-eighth (7⅛) inches to Sacramento Street; thence at right angles easterly and along the southerly line of Sacramento Street eighty-seven (87) feet six (6) inches to the place of beginning; being a part of Western Addition Block number eight hundred and forty-six (846).

II

The permanent merger of the two medical schools shall take place at the end of the second college year from date hereof, and shall be upon the following basis:

(*a*) No distinction shall be made as between students desiring instruction of the allopathic school and those desiring instruction of the homeopathic school, or in the studies or work required by them, except as follows:

First: In the second semester of the second year of medical school work the student shall be given his election to take a course in homeopathic materia medica in lieu of the regular course in materia medica, the course in homeopathic materia medica to be of the same number of hours and the instruction given to be of the same standard as that given in the regular course of materia medica. The hours of instruction shall, if possible, be so arranged as to permit of an election of both courses by any student who may so desire.

Second: In the third and fourth years of medical school work the student shall be given his election to take courses in materia medica and therapeutics and in clinical medicine of the homeopathic school in lieu of the equivalent regular courses, and, if possible, the hours of instruction shall be so arranged as to permit the student to take instruction according to both schools, if he so desires.

(*b*) For the purpose of giving instruction in homeopathy there shall be added to the faculty of the University Medical School two professors who devote their chief attention to the work of the school, one, Professor of Homeopathic Materia Medica, and the other, Professor of Applied Homeopathic Therapeutics. The Professor of Applied Homeopathic Therapeutics shall be in charge of the clinical instruction to be substituted for similar instruction in the regular courses and shall have at least two clinic rooms at his disposal in the Out-Patient Department. Both professors shall consult with the Professor of Medicine, who shall ratify the standard of instruction in the homeopathic courses, as in all other divisions of the department of medicine.

(*c*) In the event of a redistribution of clinical beds at the San Francisco Hospital resulting from the merger, one in five of such beds available to the University Medical School shall be set aside for instruction in Applied Homeopathy.

(*d*) If at any time there is no student electing to take a course offered in homeopathy, such course may be discontinued until such time as one or more students elect to take such course, but during the time of such discontinuance the catalogue of the University Medical School shall announce that such course will be given if one or more students elect to take the same and apply for instruction therein. If at any time after the permanent merger of the two schools there are for three consecutive college years no students electing to take instruction in homeopathy, then such instruction may be permanently discontinued.

III

The temporary or transitional merger of the two schools shall be upon the following basis:

(*a*) Until the permanent merger of the schools can be effected and the present student body of the medical school of the Hahnemann College can be graduated, the last-named college shall proceed, independently and at its own expense, with its regular courses of instruction, other than those for the first year, which shall not be hereafter given, dropping in successive years the second, third, and fourth years' work. The students graduated by it shall receive a diploma from it, the same to be given them at the same time and place as the students of the University Medical School. The Hahnemann College shall have the use of the real property above described during said period for the purpose of giving such instruction, but shall be responsible for all repairs and expenses in connection with said property. During said period the students of the Hahnemann College shall be granted the same consideration as to hospital facilities as they enjoy at the present time, so far as the same may be controlled or influenced by the University Medical School or the Regents.

(*b*) The course in Homeopathic Materia Medica, which it is above provided shall be offered by the University Medical School in the second semester of the second year of medical school work, shall be inaugurated with the beginning of the second semester of the college year 1916–17, and thereafter the advanced courses in homeopathy above specified shall be inaugurated by the University Medical School in regular order as the times for taking such courses are reached by the class matriculating for the present college year.

(*c*) Up to July 1, 1918, the salaries of the two professors to be added to the faculty of the University Medical School, in order to provide for instruction in homeopathy, shall be met and paid for by the Hahnemann College, and thereafter by the Regents.

(*d*) Upon the completion of the period of transitional merger the Hahnemann College shall turn over to the Regents all its equipment, assets, and property remaining after the discharge of its debts and obligations.

IV

All of the real and personal property, which it is hereinbefore provided shall be conveyed and turned over by the Hahnemann College to the Regents shall (except as to such equipment, furniture, etc., as may be useful at the University Medical School) be turned by the Regents into income-bearing properties or securities, to be by them held as the nucleus of a perpetual fund, to be known as "The Endowment for the Teaching of Homeopathy at the University of California," the income whereof shall be devoted to the support of the teaching of homeopathy at the University Medical School. The Regents shall have the power, from time to time, to sell, or otherwise dispose of, the properties and securities making up said fund, for the purpose of a better investment of the same, and shall likewise have the right to accumulate any unexpended income.

In case of the final discontinuance of the teaching of homeopathy at the University Medical School, upon the occurrence of the contingency specified in subdivision II (*d*) hereof, thereafter the income from said fund shall be applied to the support at the University Medical School of instruction in some subject or subjects as closely related to homeopathy as may be.

January 9, 1917, it was reported that the Hahnemann Medical College of the Pacific had executed a deed to the Regents of a lot on the corner of Sacramento and Maple streets, with a frontage of 132 feet 7½ inches on the westerly side of Maple Street, the deed being unconditioned.

Resources Offered to War Department:

February 13, 1917, the Regents voted full power to act to President Wheeler in the matter set forth in the following report from the President concerning the dedication to the needs of the nation in wartime emergency of all the resources of the University:

> In the event of the outbreak of war I request that the Regents empower the President of the University to offer to the War Department such use of the grounds, buildings, and equipment at Berkeley and Davis as may accord with the plans and needs of the department in the training of troops.
>
> The University of California can more efficiently fulfill its obligations to the national government under the land-grant act if it acts as a whole rather than as scattered individuals.
>
> The following considerations merit attention:
>
> 1. A large proportion of our teachers, being graduates of land-grant colleges, have had elementary training in military service.
> 2. Most of our male students in case of war will naturally enlist. In the colleges of applied sciences, where practically all the students are men, viz., Commerce, Engineering, Chemistry, Agriculture, the professors will consequently be left free to serve the government, and such service will be rendered either as military teachers or as scientific experts.
> 3. On the University grounds at Berkeley, with addition of available open lands in North Berkeley, can be assembled and trained if needed three regiments, for which a large part of the training force will be obtained from the members of the cadet regiment and from members of the faculty.
> 4. Without entirely closing the University to instruction, e.g., for women, the open grounds can be used and various buildings such as the Harmon and Hearst Gymnasiums, North Hall, shops and yards, Civil Engineering laboratories.
> 5. The University Farm at Davis would form the basis for a cavalry depot, say, for a regiment of horse. The distinguished group of trained veterinarians and animal husbandry men there available illustrates the way in which the scientific resources of the University can be put at the service of the government. Dean Hunt not only approves but is the one from whose suggestion this proposal arises.
>
> We should place it beyond doubt that we place today our resources and ourselves at the disposal of the government. The framers of the Morrill Land-Grant Act out of which the University has its life and being, doubtless contemplated a contingency like the present when they prescribed military instruction as fundamental in the curriculum of its colleges.

Reserve Officers' Training Corps:

March 13, 1917, it was voted that the Regents should signify their intention, as recommended by President Wheeler, of establishing a unit of the Reserve Officers' Training Corps; that some portion of the new torage building now being erected north of the Printing Office be devoted o the storage and handling of the new equipment in uniforms, shoes, etc., hich will be furnished by the government after the establishment of his unit; that the Regents provide a temporary building as an annex r addition to the Harmon Gymnasium as office room for the commissioned officers engaged in instruction in military science, and that the egents express it as their policy to erect as speedily as may be pracicable an armory suitable for the housing of the material which the nited States government entrusts to the University for purposes of ilitary instruction.

chool of Military Aeronautics:

June 12, 1917, it was reported to the Regents that the U. S. War epartment has established a School of Military Aeronautics at the Uniersity of California, the initial arrangement being that the U. S. War epartment should provide one dollar a day for quarters and rations for he students in the School of Aeronautics, this to be paid by the governent to the individual man, and that the U. S. War Department shall pay fty dollars to the University for each student, for an eight weeks' term.

It was voted to construct, at a cost of approximately $4000, chargeble to the income from this tuition fee, a temporary wooden building, pproximately 60 × 120 feet in size, to accommodate the equipment, etc., for the School of Aeronautics, and that the salaries and office and other xpenses for the School of Aeronautics be defrayed from the receipts from this tuition fee.

Salaries for Men in the Training Camp:

June 12, 1917, it was voted by the Regents that salaries should cease with June 30, 1917, of the members of the University staff who had entered the training camp for the Reserve Officers Corps, with the understanding that while the Regents would endeavor to hold their places open that no definite assurances could be given to them that their places would be held open for them until their return to the University; but that those who might return to the University for the opening of the year should receive the full summer salary.

Summer Military Training Course:

May 8, 1917, the Regents approved the plan of holding a seven weeks' summer military training course for preliminary military training.

Military Department Commended:

October 10, 1916, President Wheeler reported to the Regents that Captain Tenney Ross of the General Staff, after the annual inspection of the Military Department, on May 1, 1916, had reported to the U. S. War Department: "This is by far the best instructed cadet corps I have seen,'' and explicitly commended in many particulars the high character of the work being done in the Department of Military Science and Tactics under the direction of Major John T. Nance, Commandant and Professor of Military Science and Tactics.

State Emergency Fund for Research:

May 8, 1917, the Regents approved the following recommendation of the Finance Committee: ''We report that the Board of Control has expressed a desire that moneys expended from the State Emergency Fund for scientific research should be disbursed through the Regents of the University of California as appropriate disbursing agents for such expenditures by the State for scientific research. We recommend that the Regents express their willingness to render this service in the matter of serving as disbursing agents for the State's expenditure for scientific research.''

Comptroller Merritt Director of Military Registration:

May 8, 1917, the Regents granted a three-months leave of absence to Comptroller Ralph P. Merritt, beginning May 15, 1917, with the understanding that this should not interfere with his exercising such functions of his office as he might desire, nor with his contributing such services as he might desire to the national and state governments in the existing emergency. He was designated by Governor William D. Stephens Director of the Bureau of Military Registration for California, to take charge of the arrangements for military conscription in California.

Comptroller Merritt Food Director:

June 12, 1917, it was reported that it was the desire of Governor William D. Stephens and of Mr. Herbert C. Hoover that Comptroller Ralph P. Merritt should receive appointment as U. S. Food Administrator for California, continuing at the same time his duties in the University as Comptroller. It was voted that Mr. Merritt's acceptance of this appointment would meet with the full approval of the Board of Regents, with assurances on the part of the Board of its intention that the Comptroller's Office should be organized in such a way as to facilitate Mr. Merritt's serving the United States government in this capacity.

Intercollegiate Intelligence Bureau:

June 12, 1917, it was reported to the Regents that Professor Leon J. Richardson had been appointed, for the University of California, Adjutant of the Intercollegiate Intelligence Bureau and Director for California.

A Summer Session in Southern California:

April 10, 1917, the Regents voted to hold a Summer Session in Southern California in 1918 under the sole management and control of the

University of California, the place to be a matter of investigation and ecision.

University Extension in Southern California:

April 10, 1917, the Regents voted that in case the proposed appro-riation of $70,000 for University Extension for 1917–19 becomes avail-ble that at least $15,000, and more if possible, shall be devoted to University Extension work in Southern California during 1917–19.

Division of Biology to do Protozoological Work:

On June 12, 1917, it was reported to the Regents that the California State Board of Health on June 2, 1917, had voted to appoint Charles A. Kofoid, Professor of Zoology in the University of California, Consulting Biologist, and William W. Cort, Assistant Professor of Zoology, Associate Biologist, without salary from the State Board of Health, and approved lso an arrangement by which Professor Kofoid will organize and super-ise a Division of Biology to be connected with the Bureau of Com-municable Diseases, and will do protozoological and helminthological work or the State Board of Health in connection with war sanitation and lso in the matter of investigations of flukes, worms, protozoa, and other parasites in California. An estimated budget of $3000 will be provided by the State Board of Health from the contagious disease fund, for the first year.

Relations with the Children's Hospital:

August 8, 1916, the Regents approved the following recommendation of the Committee on Medical Instruction:

> That the faculty of the University of California Medical School be authorized to make an arrangement with the Hospital for Children and Training School for Nurses as to co-operation therewith for the purposes of medical education, provided, however, that no expense is to be involved o the University of California in such co-operation.

Veterinary Education:

August 8, 1916, it was reported that the California State Veterinary Association and its Southern Auxiliary had presented to the Regents resolutions urging that the University develop education in veterinary science.

Age for Carnegie Retirement:

June 12, 1917, it was reported that the Trustees of the Carnegie Foundation for the Advancement of Teaching on May 18, 1917, had adopted the following resolution:

> That the age of 65 shall be looked upon as a minimum, but not as a required age, for the retirement of officers and teachers of the associated colleges.

Hilgard Annuity Agreement:

August 8, 1916, the Regents adopted resolutions formally ratifying the annuity agreement with the daughters of the late Professor E. W. Hilgard summarized on page 266 of the report of the Secretary of the Regents for the year ending June 30, 1916, the only additional provision being that in case of damage or destruction the family shall be permitted to repair or rebuild their dwelling, and that $25 per annum shall be paid by the Regents from July 1, 1921, and $50 from July 1, 1926, toward repairs for the house.

Letter from Miss Hilgard:

August 8, 1916, it was reported to the Regents that the following letter had been received from Miss Hilgard, daughter of Professor E. W. Hilgard, long Dean of the College of Agriculture:

> The Regents of the University of California,
> Dear Sirs:
>
> Today my sister and myself have conveyed to you our homestead and the connecting property and all of the money which we possess, to the amount of ten thousand dollars, and have entered into an Annuity Agreement.
>
> Upon this occasion, of so much moment to us, we wish to place before you two repeatedly expressed desires of my father, Eugene Woldemar Hilgard, concurred in by us all, that the entire property which we have occupied for over forty years (and which is indissolubly connected with my father's life and work in this community) should eventually become University property for University purposes, and that a Hilgard Memorial Scholarship be established. It was my sister's and my own hope to bequeath these land holdings and sufficient money for the maintenance of a scholarship in memory of my father, mother, and only brother, but circumstances have arisen which make this impossible for us.
>
> We do, however, hope that upon our death these desires may seem possible of accomplishment to you, the Regents, in memory of one who had the highest ideals of the University so loyally and so unselfishly at heart.
>
> Faithfully yours,
> (Signed) Alice R. Hilgard.
>
> July 11, 1916,
> 2728 Bancroft way, Berkeley.

In reporting the receipt of this letter the Finance Committee called attention to the fact that this letter is not to be understood as in any way involving any obligation upon the Regents.

Automatic Increases in Salaries:

May 8, 1917, the Regents approved a new basis for the system of automatic increases inaugurated with the adoption of the budget for 1909–10. Beginning July 1, 1917, an instructor's salary is to be increased automatically $100 per year, from $1200, the minimum salary of a full time instructor, up to $1800, and the salary of an assistant professor $100 per year from $1800 to $2000 [subject, however, to the exceptions that increases are not automatic after instructors have arrived at a salary of $1800 and after assistant professors have arrived at a salary of $2000]; for merit, the assistant professor may have promotions in salary above $2000 up to $2400.

Settlement of the Turner Litigation:

March 13, 1917, it was reported that Attorney Warren Olney, Jr., had arranged a settlement of the litigation with T. C. Turner, as administrator of the Estate of W. C. Turner, deceased, et al., over land on which a mortgage had been foreclosed in Merced County, on the basis of the payment of $95,464.40 by the Turner interests. This settlement was approved and the mortgage for $83,507 signed by the Turner interests was released. Difficulties of long standing in regard to this particular investment were thus finally cleared up.

Legislative Appropriations for 1917:

Governor William Dennison Stephens approved appropriations voted by the Legislature of 1917 for the benefit of the University as follows:

I. The State University Fund (for general expenses of maintenance of the University): for 1917–18, $1,142,618; for 1918–19, $1,222,602.

II. Items in the General Appropriation Bill (for 1917–19):

1. Toward the support and maintenance of the University, $200,000 per annum.
2. For the support, maintenance, and equipment of the College of Agriculture, $875,000.
3. For the support and maintenance of the Scripps Institution for Biological Research, $25,000.
4. For co-operation with the United States government, under the Smith-Lever Act: for agricultural demonstration and extension work, $68,066.
5. Support of the insecticide and fungicide laboratory, $10,000.

III. Special Appropriations:

1. For a sewage and water system at the University Farm at Davis, $15,000.
2. For the construction and equipment of a creamery at the University Farm, $50,000.
3. For buildings, equipment, and livestock for the Animal Husbandry Division at the University Farm, $60,000.
4. For the construction of small buildings at the University Farm, $15,000.
5. To pay the claim of the Regents of the University of California (agricultural work), $10,000.
6. For the completion of buildings at the Riverside Citrus Experiment Station and Graduate School of Tropical Agriculture, $40,000.
7. To pay the claim of the Regents of the University of California (agricultural work), $90,000.
8. For medical teaching, $100,000.
9. For improvement of streets in Berkeley adjoining the University campus, $25,459.
10. For University Extension, $70,000.

An amendment was approved of the University Building Bond Act whereby funds provided under this act might be used for furnishings and equipment—for Gilman Hall, Wheeler Hall, Hilgard Hall, and the completion of the Library, and for landscape gardening about these buildings, and for the construction and equipment of a power plant and tunnels and subways for steam and electric lines in connection with the new buildings.

Proposed Constitutional Amendment:

A constitutional amendment which will make the President of the Alumni Association ex officio a Regent of the University and which would clarify also the legal position of the University will be submitted to vote of the people of California at the general election in November, 1918. This constitutional amendment, as now recommended to the people of California by the Legislature of 1917, would change Section 9 of Article 9 of the State Constitution to read as follows:

Sec. 9. The University of California shall constitute a public trust, to be administered by the existing corporation known as ''The Regents of the University of California,'' with full powers of organization and government, subject only to such legislative control as may be necessary to insure compliance with the terms of the endowments of the university and the security of its funds. Said corporation shall be in form a board composed of (eight) ex officio members, to wit: the governor, the lieutenant governor, the speaker of the assembly, the superintendent of public instruction, the president of the state board of agriculture, the president of the Mechanics Institute of San Francisco, (the president of the alumni association of the university) and the acting president of the university, and sixteen appointive members appointed by the governor;, provided, however, that the present appointive members shall hold office until the expiration of their present terms. The term of the appointive members shall be sixteen years; (the terms of two appointive members to expire as heretofore on March first of every even-numbered calendar year, and in case of any vacancy the term of office of the appointee to fill such vacancy, who shall be appointed by the governor, to be for the balance of the term as to which such vacancy exists). Said corporation shall be vested with the legal title and the management and disposition of the property of the university and of property held for its benefit and shall have the power to take and hold, either by purchase or by donation, or gift, testamentary or otherwise, or in any other manner, without restriction, all real and personal property for the benefit of the university or incidentally to its conduct. Said corporation shall also have all the powers necessary or convenient for the effective administration of its trust, including the power to sue and to be sued, to use a seal, and to delegate to its committees or to the faculty of the university, or to others, such authority or functions as it may deem wise; provided, that all moneys derived from the sale of public lands donated to this state by act of congress approved July 2, 1862 (and the several acts amendatory thereof), shall be invested as provided by said acts of congress and the income from said moneys shall be inviolably appropriated to the endowment, support and maintenance of at least one college of agriculture, where the leading objects shall be (without excluding other scientific and classical studies, and including military tactics) to teach such branches of learning as are related to scientific and practical agriculture and mechanic arts, in accordance with the requirements and conditions of said acts of congress; and the legislature shall provide that if, through neglect, misappropriation, or any other contingency, any portion of the funds so set apart shall be diminished or lost, the state shall replace such portion so lost or misappropriated, so that the principal thereof shall remain forever undiminished. The university shall be entirely independent of all political or sectarian influence and kept free therefrom in the appointment of its regents and in the administration of its affairs, and no person shall be debarred admission to any department of the university on account of sex.

Compensation Insurance for Employees:

January 9, 1917, it was approved that compensation insurance be obtained from the State Industrial Accident Commission to cover the faculty and employees of all sorts, including both Regents' appointees, those placed by the President on the list of "readers and helpers," clerical employees, farm laborers, mechanics, and all other employees of the University. The cost involved is approximately $5000 per annum—on the basis of the present payroll.

January 9, the Regents approved the action of the Secretary of the Regents in having signed in behalf of the Regents the following notice to the Industrial Accident Commission:

Please take notice that the undersigned, an employer of labor in the State of California, hereby accepts the compensation provisions of Chapter 176 of the Laws of 1913 of the State of California, known as "The Workmen's Compensation, Insurance and Safety Act," approved May 26, 1913, and of all laws amendatory thereof.

This election applies to all employees, including casuals.

Building Contracts Approved:

Building contracts were approved by the Regents during 1916–17 as follows:

For the University Hospital in San Francisco:

Arthur Arlett	Tile and brickwork (extra order)	$2,388.20
Clinton Construction Company	Waterproofing, etc. (extra order)	4,076.33
McLeran and Peterson	Cases and cabinets (extra order)	2,266.11
McLeran and Peterson	Mill work (extra order)	4,750.00
McLeran and Peterson	Changes in doors, sashes, cases, etc. (extra order)	678.40
McLeran and Peterson	Completion of plastering (on basis of 10 per cent of cost).	
McLeran and Peterson	Cleaning (extra order)	2,030.26
D. N. and E. Walter	Linoleum	10,335.40

For Hilgard Hall at Berkeley (second unit of the Agriculture group):

P. E. Denivelle	Cement finishing	$27,900.00
Forderer Cornice Works	Roofing	10,750.00
H. W. Johns-Manville Company	Acoustic felt	1,922.00
Knowles and Mathewson	Plastering	25,669.00
Knowles and Mathewson	Cement bases (extra order)	560.00
S. Kulchar and Company	Carpentry	79,994.00
McFell Electric Company	Electric fixtures	14,685.00

Joseph Musto Sons-Keenan Company	Marble and terrazzo	7,545.00
Scott Company	Plumbing	19,640.00
Scott Company	Heating and ventilating	46,660.00
Sound Construction Company	Excavation, grading and concrete	106,485.00

For Gilman Hall (first unit of the group of permanent buildings for chemistry):

Leonard Bosch	Exterior plastering	$7,940.00
Leonard Bosch	Changes in exterior plastering (extra order)	2,560.00
Clinton Construction Company	Excavation and concrete	61,486.00
Forderer Cornice Works	Roofing	4,682.00
Knowles and Mathewson	Plastering	14,082.00
McLeran and Peterson	Carpentry	35,327.00
Joseph Musto Sons-Keenan Company	Marble	1,325.00
F. E. Newbery Electric Company	Electric work	22,652.00
Otis Elevator Company	Elevator	457.00
Scott Company	Plumbing	14,472.00
Scott Company	Heating and ventilating	12,070.00

Note.—The contract prices for Gilman Hall as given above are net.

For Benj. Ide Wheeler Hall:

S. McPherson	Brick walk (extra order)	$1,631.00
Pacific Rolling Mills	Extra freight for transportation by railroad instead of Panama Canal (extra order)	886.68

For the completion of the University Library at Berkeley:

J. D. Hannah	Galvanized iron railings, platforms, ladders, etc. (extra order)	$521.00

For storehouse at Berkeley:

J. M. Dougan	Construction of storehouse (extra order)	$7,397.00
Leonard Bosch	Exterior plastering	885.00

For the Buckingham and Hecht Building (a building erected on First Street in San Francisco as an investment of endowment funds):

Clinton Construction Company	General contract (the contractors to guarantee that the building shall not cost, including a fee of $10,000 for their services and the use of their equipment, etc., more than $110,000).	

For a new dental infirmary and other additions and alterations to the Dental Building in San Francisco:

McLeran and Peterson	$15,564.85

For the second unit of the Power Plant at Berkeley:

McLeran and Peterson	General contract (extra order)	$8,732.00

For roadway between Sather Campanile and Bacon Hall:

Oakland Paving Company	$701.08

Contracts for Furnishings and Equipment:

The following contracts for furnishings and equipment were approved by the Regents during the year 1916–17:

James B. Clow & Sons, sterilizing, disinfecting, and pasteurizing apparatus for the University Hospital	$7,506.50
Cresmer Manufacturing Company, furniture and equipment for the Riverside buildings	4,514.40
Rucker-Fuller Desk Company, furnishings for completion of the University Library	9,392.60

Completion of Joe Kaiser Contract:

Joe Kaiser, contractor for the lathing, furring, and plastering of the new University Hospital in San Francisco, having failed to comply with his contract and having refused to comply with the plans and specifications, and having failed to repair and correct imperfect work, his contract was terminated by notice from Comptroller Merritt on November 28, 1916. December 12, 1916, the Regents approved this action and authorized an arrangement with McLeran & Peterson to complete the plaster contract for the University Hospital at cost plus ten per cent.

Removal to the New University Hospital:

June 12, 1917, it was voted that the maternity, dispensary, and tonsil service of the University Hospital be continued throughout the summer, but that other service be discontinued from June 1, 1917, until such time as the Regents open the new University Hospital, June 30, 1917, being the date set for the completion of the Hospital, and its equipment remaining to be taken care of after that date.

Gilman Hall:

March 13, 1917, the Regents approved President Wheeler's recommendation that the first unit of the new group of buildings for chemistry should be named ''Gilman Hall,'' in honor of Daniel Coit Gilman, President of the University from 1872 to 1875, to whose initiative was due the organization of the College of Chemistry of the University of California, and who, as first President of Johns Hopkins, greatly advanced scientific instruction in America.

North Hall Vacated:

December 12, 1916, the Regents voted to have North Hall vacated, save for the basement story, which accommodates the Associated Students' Store, the offices of the student publications, etc., and to remove all of North Hall save the basement after Commencement Week of 1917, the basement to be allowed to remain until such time as quarters are provided for the student offices and the Associated Students' Store in the new Students' Union, or elsewhere.

Comptroller's Construction Work Commended:

April 10, 1917, the Regents approved the following recommendation of the Finance Committee:

Now that Benj. Ide Wheeler Hall has been completed, the University Library and the University Hospital brought close to completion, and work well advanced on Hilgard Hall, the Chemistry Building, and the new buildings of the Citrus Experiment Station and Graduate School of Tropical Agriculture at Riverside, together with the accomplishment of much building work at the University Farm and at the Scripps Institution for Biological Research, your Finance Committee feels it a great pleasure to call to the particular attention of the Regents the efficiency of the building methods of the University under the successful organization of such matters by the Comptroller, Ralph P. Merritt.

Lease to Buckingham and Hecht and Blake, Moffitt, and Towne:

September 12, 1916, the Regents approved a lease to Buckingham and Hecht and to Blake, Moffitt, and Towne of the lower four floors and basement and the upper two floors, respectively, of a six-story and basement building of the reinforced concrete warehouse type, on a lot on the east side of First street in San Francisco, with a frontage of 68 feet 9 inches and a depth of 137 feet 6 inches, the lease to be for ten years from November 1, 1917, at a rental, for Buckingham and Hecht, of $750 a month, with option for renewal by the lessee for an additional ten years, provided that the option be exercised by March 1, 1927; and a rental, for Blake, Moffitt, and Towne, of $220 a month, Blake, Moffitt, and Towne to have an extension of the existing lease for the Blake, Moffitt, and Towne Building on First street, so that it shall expire contemporaneously with the lease of the two upper floors of the new building.

September 12, 1916, the Regents approved an agreement with John Bakewell, Jr., and Arthur Brown, Jr., to serve as architects for the Buckingham and Hecht Building.

Building on the Sutter Street Lot:

May 8, 1917, the Regents approved a lease to the Yawman and Erbe Manufacturing Company and Robert S. Atkins, jointly, for a seven-story and basement building of the reinforced concrete type on the lot on Sutter street between Montgomery and Kearney streets, San Francisco, owned by the Regents, for fifteen years, at an annual rental of $28,000, and authorized a contract with Willis Polk and Company for architectural services for this building.

Agreement with the Sheldon Company:

April 10, 1917, the Regents approved an agreement with the Mark Sheldon Company, owners of the property adjoining land on First street, San Francisco, owned by the Regents, that in view of the action of the Regents in hot-coating the south wall of the Sheldon Building and placing proper building material paper over the hot-coating to prevent any bond between the Sheldon Building and the Buckingham and Hecht Building, the Mark Sheldon Company would agree that should the Sheldon Building at some time be torn down and another building be erected in its place that they would, at their own cost and expense, cut off from the wall of the Buckingham and Hecht building, owned by the Regents, the one-half inch that protrudes over and upon the property of the Mark Sheldon Company.

Lease from Mrs. Lowe of Davis Lands:

March 13, 1917, the Regents voted to lease 300 acres of land, adjoining the University Farm at Davis on the south, from Agnes Armstrong Lowe, at $3750 per annum for ten years, with an option of renewal for five years on the same terms, the lease to contain an option for the Regents to purchase the property at any time within fifteen years at $100,000. This land is to be used for experiments relating to the growing of almonds and for experimental work in the field of dry farming.

Lease of Lick Lands to R. F. Morrow:

February 13, 1917, the Regents approved a renewal for three years of the lease, at $80 per annum, to R. F. Morrow, of Lick Observatory lands described as follows:

All those certain lands owned by the Regents in the County of Santa Clara, State of California, situate, lying and being south of Lick Avenue on Mount Hamilton Road, in Sections eight (8), nine (9), sixteen (16), and seventeen (17), in Township 7 South, Range 3 East, Mount Diablo Base and Meridian.

Lick Observatory Lands Leased to Anthony Dourond:

June 12, 1917, the Regents approved a lease to Anthony Dourond for five years from May 21, 1917, at $65 per annum, for the Lick Observatory lands north of the county road from Smith Creek to the Lick Observtaory, in Sections 4, 5, 8, and 9, Township 7 S., Range 3 E., M.D.B. & M., with privilege of renewal for three years, the lessee agreeing to erect a fence when requested to do so by the foreman of the Lick Observatory and to maintain it in good repair, and to use the lands for grazing only, excluding sheep and hog grazing, and no timber or wood to be cut, the lessee to comply with all federal, State, or county requirements concerning the extermination of ground squirrels, the Regents to have authority to terminate the lease on thirty days' written notice.

Land for Road Deeded to San Diego:

November 14, 1916, a deed was approved from the Regents to the City of San Diego for a strip of land 100 feet in width over and across Pueblo Lot 1298 of the Pueblo lands of the City of San Diego for street purposes.

Kearney Land for Madison School District:

August 8, 1916, it was voted to deed three acres of the land near Fresno bequeathed to the Regents by M. Theo. Kearney to the Madison School District, subject to the provision that if the land is not used for school purposes it shall revert to the Regents. This land is described as follows:

Commencing at the Northeast corner of Lot Nine (9) of Section Twelve (12), Township Fourteen (14) South, Range Nineteen (19) East, Mount Diablo Base and Meridian, in the Fruitvale Estate, as per map of same on file in the office of the County Recorder of said County of

Fresno; thence Westerly along the center line of Madison Avenue three hundred and twenty-nine and 75/100 (329.75) feet to the Northwest corner of said Lot Nine (9); thence Southerly along the West line of said Lot Nine (9) three hundred and ninety-six and 30/100 (396.30) feet; thence Easterly three hundred and twenty-nine and 68/100 (329.68) feet, a little more or less, to a point on the East boundary line of said Lot Nine (9) (in the center of Jefferson Avenue) three hundred and ninety-six and 39/100 (396.39) feet South of the Northeast corner of said Lot Nine (9); thence Northerly three hundred and ninety-six and 36/100 (396.36) feet to the point of beginning.

Deed for the Kearney School District:

February 13, 1917, the Regents voted to deed two acres of land of the Kearney Estate to the Kearney School District, the land to revert should it cease to be used for school purposes. The land so deeded is described as follows:

Commencing at the Southeast corner of Lot number Three Hundred and Forty-six (346) in Section Eighteen (18), Township Fourteen (14) South, Range Nineteen (19) East, Mount Diablo Base and Meridian, as said lot is delineated and designated on the map of the Fruitvale Estate recorded in the office of the County Recorder of the County of Fresno, State of California, in volume three (3) of Maps at page sixty-seven (67), running thence Westerly along the Southerly boundary of said lot two hundred ninety-five and sixteen hundredths (295.16) feet, thence at right angles Northerly two hundred ninety-five and sixteen hundredths (295.16) feet, thence at right angles Easterly two hundred ninety-five and sixteen hundredths (295.16) feet to the Westerly line of South Kearney Avenue, thence Southerly along said Westerly line of South Kearney Avenue two hundred ninety-five and sixteen hundredths (295.16) feet to the point of commencement, and containing two (2) acres, more or less.

California School of Fine Arts:

August 8, 1916, it was voted to change to ''California School of Fine Arts'' the name, ''California School of Design,'' as recommended by the Directors of the San Francisco Art Association.

Federal License for Water for the Palace of Fine Arts:

June 12, 1917, the Regents voted to notify the San Francisco Art Association that the U. S. War Department had granted a revocable license to the Regents permitting water to be taken from Lobos Creek for the Palace of Fine Arts in San Francisco, but that the Regents will assume no liability for the cost of the water taken for the Palace of Fine Arts in pursuance of this license, nor for incidental costs. The license, revocable at will by the Secretary of War, permits the taking of surplus water not needed for military purposes, not to exceed 30,000 cubic feet per month, from Lobos Creek through the service pipes heretofore used for the Palace of Fine Arts for the maintenance of the grounds, toilets, and small fountains, subject to the conditions that the maintenance work for these service pipes shall be subject to the approval of the command-g officer of the Presidio, and done at the expense of the licensee, and at there shall be a water charge at the rate of seven and a half cents er thousand gallons, and that on the relinquishment of the license the rvice pipes shall be disconnected and the premises restored to their ormer condition without cost to the government. The Art Association writing agreed to assume full responsibility for all charges in the atter.

rotest in Regard to Oakland Waterfront Matter:

October 10, 1916, President Wheeler reported to the Regents that in eply to a letter from the Taxpayers' League of Alameda County, adressed to the Secretary of the Board of Regents, regarding the report ade by Professor Ira B. Cross and Professor Carleton H. Parker to . M. Smith and associates on the proposed lease of the West Oakland arbor lands, in which letter the League asks that these two members of he faculty be dismissed from the University for intruding in the political ffairs of a municipality, provided they shall be shown to have been so ctive, the following letter had been received from Professor Cross and rofessor Parker together with a copy of the report in question:

September 21, 1916.

ear Dr. Wheeler:

Replying to your note of September 18, we beg to state that the facts n the case in question are as follows:

Mr. F. M. Smith and associates wished to lease from the City of Oakand 268 acres of the submerged western waterfront belonging to the unicipality and lying between the Southern Pacific and Key Route oles. The terms of the proposed lease are to be found in the accomanying documents. A lease of 99 years was requested, and as the city harter permitted only 25-year leases of city property, a charter amendent election was necessary and was duly called by the City Council.

During July we were called in by Mr. Smith and associates to make n investigation and to report our personal unbiased opinion as to the dvantages to be derived by Oakland from such a lease. We spent some ix weeks in investigating this and in studying other projects in the nited States and Europe, and finally made our report, a copy of which s enclosed. We may say, in passing, that we consistently advised the ackers of the project that they were not likely to profit by the proposed ease because the terms offered were so favorable to the City of Oakland.

Mr. Smith and associates used our conclusions in a circular which we nclose. The election was held on August 22, and the amendment carried.

Yours sincerely,

(Signed) Ira B. Cross.
(Signed) Carleton H. Parker.

President Wheeler stated to the Board: "I regret the possibility that he name of the University should be brought to apparent support of his undertaking. That is, of course, unfortunate, but the spirit in hich the men undertook the work was highly honorable. They are oth honorable men. I see no reason to recommend further action."

Amendment to Standing Order in Regard to Committees:

December 12, 1916, Standing Order No. 90 was amended so that the name of the standing committee in question should be: "Committee on the Scripps Institution for Biological Research."

Standing Order re Release of Mortgages:

April 10, 1917, the Regents amended Standing Order No. 177 in regard to the release of mortgages to read as follows:

All releases, partial or complete, and satisfactions of mortgages, by this corporation, shall, unless their execution otherwise be directed in the particular instance by the corporation or the Finance Committee, be executed on its behalf by the President and Secretary of the corporation, in its name and under its seal, and said officers are hereby authorized so to execute such instruments, and the Secretary is hereby authorized to attach to all such instruments a copy of this Standing Order, certified to by him as such Secretary, and under the seal of this corporation.

April 10, 1917, a new Standing Order, No. 178, was adopted by the Regents, as follows:

The President and Secretary of this corporation are hereby instructed to exercise the authority conferred upon them by Standing Order 177, to execute releases and satisfactions of mortgages, only upon the request of the Treasurer or the Finance Committee, and to deliver the same when executed by them to the Treasurer of the corporation for final delivery to the party or parties entitled to the same, and the Treasurer is instructed to make such final delivery of each such release and satisfaction only upon either the payment to him in full, on or after its maturity, of the indebtedness secured by the mortgage so released or satisfied, or upon the express authorization, in the particular instance, of the Finance Committee and upon the conditions prescribed by it.

Agreement with the Walnut Growers:

June 12, 1917, the Regents approved an agreement with the California Walnut Growers' Association by which $4000 per annum will be provided by the Association for researches as to the walnut industry. The salary and expenses of a field man will be provided by the Association. The University agrees to plan and conduct, through the station at Riverside, investigational work on walnut problems, sufficient to employ the entire time of this field man, and to supervise and direct his work and publish and disseminate the results obtained. The selection of this field man and the general nature of the investigations he is to undertake are to be subject to joint approval. The agreement is to run for an indefinite period, but may be terminated on June 30 of any year by written notice served by either party three months in advance of that date.

Custodian of Whitaker's Forest:

February 13, 1917, Forest Ranger William Clingan of the U. S. Forest Service was designated Custodian of Whitaker's Forest, given to the University of California by the late Horace Whitaker, to fill the vacancy caused by the resignation of Forest Ranger Albert E. Redstone.

To Fence Whitaker's Forest:

March 13, 1917, it was voted to fence Whitaker's Forest—''big tree'' and in the Sierras—at a cost of approximately $850.

Farm School Students Ask Gymnasium:

November 14, 1916, it was reported that the Associated Students of he University of California Farm School had presented a memorial urging the erection of a gymnasium for the University Farm School.

Budget for 1917–18:

April 10, 1917, the Regents approved a budget for 1917–18 for an estimated expenditure of $3,018,341.95.

Von Schroeder Foreclosure:

June 12, 1917, the action of the Finance Committee was approved and confirmed in having instructed the Attorney of the Regents to bring foreclosure proceedings against Mary Ellen and John H. von Schroeder and in having given to the Attorney of the Regents power to act in the matter of collection of this claim of the Regents, consisting of a mortgage for $50,000 on the Hotel Rafael, with various items of interest, nsurance premiums advanced, legal charges, etc.

Bear Gulch Water Company:

October 10, 1916, the Regents approved the proposal that $25,000 be nvested by the Regents in five per cent bonds of the Bear Gulch Water Company, to provide funds for improvement of the company's plant, in order to increase the amount of water available for sale and thus to increase the revenues of the company (four-fifths of the stock of which is owned by the Regents through Miss Cora Jane Flood's gift of endowment for the College of Commerce).

Sale of the Alexander Agassiz:

October 10, 1916, sale at $6000 was approved of the Alexander Agassiz, he boat heretofore used by the Scripps Institution for Biological Research, it being intended to use hereafter a craft equally efficient but ess expensive to operate.

Sale of Dental Equipment to Students:

March 13, 1917, the Regents voted that the Dean of the College of Dentistry and the Comptroller be authorized to arrange for sale to dental tudents of dental equipment, such equipment to be purchased by the College of Dentistry on the basis of the most favorable bids received from manufacturers or dealers and then sold to students by the College of Dentistry.

Ordnance Bond:

October 10, 1916, a bond for $90,000 was authorized in favor of the United States in the matter of the issuance of ordnance and ordnance stores.

Realty Union Stock Returned:

February 13, 1917, the Regents voted to return to Thomas Hambrook the certificate in the Realty Union given to the University in March, 1914, by Mrs. Edith P. Hambrook with the provision, at that time, that the income thereon should be paid to Mr. Hambrook throughout his lifetime.

''Working Off'' Laboratory Deposits Discontinued:

January 9, 1917, the Regents voted to discontinue after June 30, 1917, the practice of permitting departments to permit students to ''work off'' laboratory deposits, inasmuch as it was felt that allotments for expenditure should be definite in amount instead of indefinite.

Collateral Loans:

December 12, 1916, the Finance Committee was authorized to make loans on collateral securities during 1917.

Bonds:

December 12, 1916, a bond for $8000 was authorized, in favor of the United States, for the obtaining of alcohol, tax free, and, further, the Regents voted to indemnify Regents J. K. Moffitt and Guy C. Earl for serving as sureties on this bond.

Reissuance of Lost Checks:

November 14, 1916, it was voted ''that when checks issued by the University are lost, the person in whose favor the check was drawn be required to give a bond prior to the issuance of a duplicate check only if the amount of the check exceeds $25, notice to stop payment on such lost checks in all cases to be given to the bank on which the check is drawn.''

Gifts to the University:

See pages 169–186 for lists of gifts to the University during the year 1916–17.

COMPTROLLER'S REPORT, 1916-17

AUDITORS' CERTIFICATE

The Finance Committee of the
Board of Regents of the University of California.

Dear Sirs: The books and accounts of the University of California have been audited for the year ended June 30, 1917, and we certify that the Balance Sheet of June 30, 1917, the Statement of Income and Expenditures for the year ended June 30, 1917, and the accompanying Schedules are in accordance therewith, and, in our opinion, correctly exhibit the financial condition of the University.

The Investment securities have all been examined, and agree with the records.

The Income from the Trust Funds has been expended in accordance with the specified conditions of the various trusts.

McLaren, Goode & Co.,
Certified Public Accountants.

San Francisco, Cal., October 2, 1917.

BALANCE SHEET

ASSETS

Schedules			
	Real Estate and Improvements:		
‘‘A’’	Real estate in Berkeley	$1,545,822.44	
‘‘B’’	Buildings and improvements in Berkeley	5,375,686.04	
‘‘C’’	Real estate and improvements not in Berkeley	3,981,355.10	
			$10,902,863.58
	Equipment:		
	General	$2,522,900.31	
	Bancroft Library	250,005.00	
			2,772,905.31
	Investments:		
	Notes receivable	$ 703,741.94	
	Bonds	1,234,971.00	
	Stocks	170,552.00	
	Real estate held as investments	2,328,785.90	
	Balances on contracts for sale of real estate	1,300.00	
	Expenditures under G. W. Hooper Endowment Fund	492,766.13	
			4,932,116.97
	Suspense Account—Montgomery Avenue Bonds		21,999.00
	Departmental and other expenditures carried forward		299,050.60
	Amounts due from State of California under various appropriations		185,138.91
	Sundry debtors		166,052.95
	Cash on hand		280,596.71
			$19,560,724.03

JUNE 30, 1917

LIABILITIES

Schedule		
	University of California, surplus invested in fixed assets	$13,621,933.03
"M"	Endowment funds	5,460,976.07
	Gains in Endowment Pool investments	2,186.84
	Fund income accounts	35,714.36
	Donation accounts—Unexpended balances	38,079.11
	Balances on hand to be used for specific purposes	149,094.63
	Sundry creditors	221,254.76
	Permanent Building Fund	9,105.67
	Revenue account surplus	22,379.56
		$19,560,724.03

[Schedule "A"]

REAL ESTATE IN BERKELEY

University Campus site	$1,000,000.00
Hearst Hall and Hearst Cottage site	7,000.00
Hillegass Tract site	194,991.04
Palmer House site	17,500.00
Barrow Street property	63,450.00
Watershed lands	168,456.61
Sylvan Way property	15,395.00
Sylvan Way and College Avenue buildings and lands	31,924.58
Telegraph and Allston Way	47,105.21
	$1,545,822.44

[Schedule "B"]

BUILDINGS AND IMPROVEMENTS IN BERKELEY

Acid House	$480.00
Aeronautics Building	3,998.47
Agriculture, Forestry Division, portable house	1,237.76
Agricultural Building (Budd Hall)	7,200.00
Agriculture Hall	212,883.85
Anatomy Building	8,900.00
Architectural Building	23,377.53
Bacon Library Building	60,515.74
Bacteriological Laboratory	480.00
Barn	2,300.00
Boalt Hall of Law	159,287.61
Botany Building	5,600.00
California Field Bleachers	20,000.00
California Hall	271,711.33
Cement sidewalks	596.25
Chemistry Auditorium	36,314.67
Chemistry Addition No. 2	28,648.75
Chemistry Building	81,000.00
Chemistry Building, First wing	147,381.62
Chemistry Storehouse	10,426.03
Carpenters' Shop Mill	1,500.00
Civil Engineering Hall	36,750.30
Civil Engineering Laboratory	2,400.00
Civil Engineering Testing Laboratory	9,366.08
Concrete bridge near Faculty Club	1,387.92
Concrete bridge near Football Statue	3,384.33
Concrete bridge at Sather Gate	10,922.86
Conservatory	10,800.00
Dairy Barn	2,400.00
Domestic Science Building	16,481.70
Drinking fountain	619.10
Dairy manure pit	1,031.15
Dairy milk house	4,160.60
Drawing Building	19,354.18
East Hall	18,000.00
Entomological Laboratory	2,569.99
Faculty Club Building	30,000.00
Fertilizer Control Laboratory	26,385.72
Girton Hall	4,032.34
Forward	$1,283,885.88

[Schedule ''B''—*Continued*]

Carried forward		$1,283,885.88
Greek Theatre		45,000.00
Handball courts		666.50
Harmon Gymnasium		50,181.89
Hearst Hall		59,398.27
Hearst Memorial Mining Building		644,400.00
Hilgard Hall		246,509.24
Hygiene and Pathological Building		39,450.22
Landscape gardening		3,118.85
Mechanics Building		61,025.00
John Mitchell Monument		358.95
Museum Building		3,667.77
Mining Building, Fountain, and Circle		15,887.54
New permanent roads		78,914.99
North Hall		2,000.00
Nursery and propagation house		1,500.00
Painters' Shop		2,000.00
Philosophy Building		8,000.00
Plant houses		700.00
Platform scales		350.00
Power, Light and Heat Plant:		
Power Plant (building and machinery)	$151,619.98	
Heating system	51,385.38	
Electric construction on Campus	9,430.68	
		212,436.04
Printing Office		21,441.74
Plumbing Shop		1,200.00
President's House		113,868.35
Rifle range		501.90
Running track		60,000.00
Sather Esplanade		40,428.69
Sather Gateway		39,413.51
Sather Tower		209,862.62
Senior Hall		5,915.02
Shooting gallery		50.00
South Hall		126,000.00
South Hall Addition		5,681.63
Rudolph Spreckels Physiological Laboratory		25,000.00
Storage bins		1,000.00
Storehouse, General		10,122.22
Forward		$3,419,936.82

[**Schedule ''B''**—*Continued*]

Carried forward		$3,419,936.82
Strawberry Cañon weir		569.80
Students' Infirmary and Annex		29,073.09
Students' Observatory		8,500.00
Superintendent's Office, Grounds and Buildings		1,200.00
Swimming tank		17,200.00
Sun-dial		350.00
Tennis courts		22,115.24
Tool house, Botany Garden		282.90
Trunk sewer		6,356.10
University Library		1,126,603.58
Viticultural Laboratory		400.00
Benjamin Ide Wheeler Hall		702,361.19
Women's athletic field		2,297.67
Women's swimming pool		12,445.34
Zoology, Museum of Vertebrate		15,094.31
Dwellings rented:		
Palmer house	$2,500.00	
University cottages	8,400.00	
		10,900.00
		$5,375,686.04

[Schedule ''C'']

REAL ESTATE AND IMPROVEMENTS NOT IN BERKELEY

Affiliated Colleges San Francisco		$405,707.74
Dentistry Building		29,940.98
University Hospital Building		559,745.73
San Francisco Institute of Art		235,150.00
Wilmerding School:		
New buildings	$64,991.93	
Old buildings	24,906.46	
Real estate	61,882.76	
		151,781.15
Lick Observatory, Land and Buildings:		
Land and buildings	$387,000.00	
Barn	1,254.95	
Dormitory and cottages	55,169.08	
Electric light and power plant	11,606.23	
Tank	2,701.00	
Vault	19,834.70	
Lands:		
Cook Tract	960.00	
Duckworth Tract	316.42	
Hartzoke Tract	262.73	
Holden Tract	511.25	
		479,616.36
Pacific Grove—Real estate of Herzstein Seaside Laboratory		2,500.00
University Farm, Davis—Land and buildings		533,846.93
Buildings in East Oakland—Hog serum plant		8,695.92
Southern California Pathological Laboratory:		
Buildings and land at Riverside	$209,689.08	
Buildings at Whittier	12,821.31	
		222,510.39
Imperial Valley—Buildings at Meloland		3,021.53
Kearney Estate, Fresno		1,000,000.00
Los Angeles Medical Department:		
Land, buildings and equipment	$100,000.00	
Hospital buildings	24,999.70	
		124,999.70
Scripps Institution:		
Buildings at La Jolla	$101,655.36	
Land at La Jolla	90,000.00	
		191,655.36
Other real estate:		
Congressional lands	$10,568.92	
Public building lands	800.00	
Potrero Avenue lots	10,364.39	
Whitaker's Forest	10,450.00	
		32,183.31
		$3,981,355.10

[Schedule "M"]

ENDOWMENT FUNDS

Alumni of Y. W. C. A. of University of California Fund	$600.00
Alumni Association Life Membership Fund	4,230.54
Alumni Hall Fund	11,866.80
Alumnus Book Fund	5,372.76
Associated Women Students' Fund	1,108.94
Philo Sherman Bennett Prize Fund	675.57
Joseph Bonnheim Scholarship Fund	70,000.00
Class of 1874 Library Fund	52.91
Class of 1881 Loan Fund	1,242.21
Class of 1886 Loan Fund	5,741.28
Class of 1887 Library Fund	440.00
Class of 1895 Loan Fund	786.94
Class of 1897 Library Fund	105.08
Class of 1897 Loan Fund	1,233.53
Class of 1898 Loan Fund	231.43
Class of 1900 Library Fund	628.50
Class of 1902 Library Fund	125.00
Class of 1903 Loan Fund	1,275.93
Class of 1906 Fund	300.00
Class of 1907 Permanent Endowment Fund—Books	500.00
Class of 1907 Permanent Endowment Fund—Class	150.00
Class of 1908 Fund	226.23
Class of 1909 Endowment Fund	600.00
Class of 1909 Loan Fund	1,204.73
Class of 1910 Endowment Fund	1,350.00
Class of 1911 Class Fund	1,000.00
Class of 1911 Loan Fund	758.72
Class of 1912 Fund	1,900.00
Class of 1913 Fund	1,190.00
Class of 1914 Fund	1,275.00
Class of 1915 Fund	1,000.00
Class of 1916 Fund	1,400.00
Edith Claypole Memorial Research Fund	10,773.67
P. Chas. Cole Scholarship Fund	2,775.93
Therese F. Colin European Fellowship Fund	10,761.94
Therese F. Colin European Fellowship Fund, No. 2	1,171.89
Consolidated Perpetual Endowment Fund	992,217.27
Emily Chamberlain Cook Prize Fund	1,194.99
W. R. Davis Scholarship Fund	11,000.00
E. A. Denicke Library Fund	2,000.00
Forward	$1,150,467.79

[Schedule "M"—*Continued*]

Carried forward	$1,150,467.79
E. A. Denicke Loan Fund	6,716.63
F. W. Dohrmann Memorial Loan Fund	5,527.71
Dental Endowment Fund	6,445.84
Dental Loan Fund	150.12
Doe Library Fund	95,842.30
John Dolbeer Scholarship Fund	17,283.35
Helen Du Bois Endowment Fund	5,016.52
Federal Endowment Fund	732,485.14
Dr. C. W. and Mrs. Sarah E. Fox Memorial Fund	100,000.00
Cora Jane Flood Endowment Fund	377,549.02
James M. Goewey Scholarship Fund	16,415.50
Grubstake "W" Loan Fund	474.46
Hamerslag Loan Fund	6000.00
Hesse Memorial Scholarship Fund	3,800.00
Hilgard Fund	32,500.00
Chas. M. Hitchcock Endowment Fund	10,000.00
George Williams Hooper Endowment Fund	1,000,000.00
Cornelius B. Houghton Scholarship Fund	3,000.00
Howison Foundation Fund	75,000.00
Samuel C. Irving Prize Fund	500.00
Albert Sidney Johnston Memorial Scholarship Fund	3,500.00
Carrie M. Jones Scholarship Fund	100,000.00
Jucksch Endowment Fund	600.00
Martin Kellogg Fellowship Endowment Fund	20,000.00
William Watt Kerr Memorial Loan Fund	2,000.54
Leona Lebus Fund	4,000.00
LeConte Memorial Fellowship Fund	10,400.00
Lick Observatory Fund	90,018.16
Loan Fund No. 2	200.00
Loan Fund No. 3	100.62
John W. Mackay, Jr., Endowment Fund	100,000.00
D. O. Mills Endowment Fund	170,553.76
Massachusetts Relief Fund Endowment	100,000.00
Medal Loan Fund	352.87
Men's Dormitory Fund	504.65
Eugene Meyer, Jr., Library Endowment Fund	2,000.00
Mining Students' Loan Fund	4,243.71
Napa Seminary Loan Fund	798.61
Bernard Nathan Scholarship Fund	5,000.00
Paget Scholarship Fund	3,009.09
Forward	$4,262,456.39

[Schedule ''M''—*Continued*]

Carried forward	$4,262,456.39
W. Palache Endowment Fund for Hospital	10,000.00
Frank M. Pixley Scholarship Fund	3,563.22
Prytanean Hospital Fund	223.96
Prytanean Fund for Students' Union	382.28
Prytanean Fund for Women's Dormitory	1,192.11
Oriental Institute Endowment Fund	4,959.55
Michael Reese Library Fund	50,000.00
Richardson Latin Translation Prize Fund	1,600.00
Herman Royer Endowment Fund	5,025.60
San Francisco Girls' Union Scholarship Fund	5,000.00
Sheffield Sanborn Scholarship Fund	15,000.00
San Joaquin Women's Clubs Loan Fund	140.51
Jane K. Sather Tower Fund (unexpended balance)	15,137.38
Jane K. Sather Classical Chair Fund	120,615.62
Jane K. Sather Historical Chair Fund	105,661.29
Jane K. Sather Historical Library Fund	12,461.68
Jane K. Sather Law Library Fund	21,543.35
Jane K. Sather Library Fund	10,000.00
Jane K. Sather Fund, awaiting distribution	44,607.16
Snell Seminary Memorial Loan Fund	312.79
Special Senior Class Loan Fund	1,160.13
Horatio Stebbins Scholarship Fund	4,000.00
Students' Co-operative Society Fund	11,340.57
Summer Session Endowment	6,000.00
Bertha Henicke Taussig Memorial Scholarship Fund	10,000.00
Willard D. Thompson Memorial Fund	55,141.98
Edward Tompkins Endowment Fund	106,829.09
University Hospital Endowment Fund	649.68
University Hospital Endowment Fund (San Francisco Maternity)	10,000.00
University Medal Fund	3,896.00
University Endowment Fund	70,738.30
Veltin Endowment	1,000.00
Walcott Loan Fund	301.70
F. J. Walton Memorial Loan Fund	7,707.07
Barbara Weinstock Lectureship Fund	6,850.00
Whiting Fund	25,000.00
J. Clute Wilmerding Endowment Fund	441,799.49
Women's Dormitory Fund	2,679.17
Y. W. C. A. Endowment Fund	6,000.00
	$5,460,976.07

INCOME

FROM JULY 1, 1916, TO JUNE 30, 1917

Schedules			
No. 1	Income prior to June 30, 1916, brought forward		$187,048.50
No. 2	United States	$110,235.33	
No. 3	State appropriations	3,106,673.28	
No. 4	Student fees	292,048.68	
No. 5	Clinics of hospitals and Infirmary	80,707.47	
No. 6	Departmental sales receipts	235,672.83	
No. 7	Income from investments	220,394.69	
No. 8	Gifts:		
	For current use	78,841.27	
	For buildings and improvements	5,650.39	
	For University hospital building	26,025.00	
	For endowments	123,805.64	
	Kearney Vineyard income	40,000.00	
	Total income		4,320,054.58
			$4,507,103.08

EXPENDITURES

From July 1, 1916, to June 30, 1917

Schedules			
No. 9	Administration and operation	$419,812.16	
No. 10	Buildings and improvements	1,869,331.01	
No. 11	Education and research	1,998,496.57	
No. 11 (*a*)	Research and other expenses in connection with the War Department	9,622.47	
No. 12	Disbursements from class funds, scholarships, fellowships and prizes	48,237.57	
No. 13	Departmental sales, etc., expenditures	215,759.90	
	Interest paid to endowment income, etc.	5,555.41	
	Total expenditures		4,566,815.09
No. 14	Net additions to endowment funds		123,526.90
No. 15	Income prior to June 30, 1917, carried forward		173,057.79
			$4,863,399.78
	Less expenditures prior to June 30, 1917		372,084.98
			$4,491,314.80
	Surplus for the year		15,788.28
			$4,507,103.08

[Schedule No. 1]

INCOME AND EXPENDITURES PRIOR TO JUNE 30, 1916 CARRIED FORWARD

Income		
Agricultural Department sales	$12,239.58	
Fund interest accounts	34,731.97	
Scholarships and prizes	2,493.05	
Donations	36,726.32	
Miscellaneous	79,635.26	
Jane K. Sather Fund for Tower	21,040.49	
Jane K. Sather Fund for Esplanade	19,919.74	
University Hospital Building Fund	162,334.53	
		$369,120.94
Less		
Construction accounts	$43,966.90	
Hooper Foundation Research Expenses	82,703.18	
State Appropriation Suspense Account	44,107.62	
		$170,777.70
		$198,343.24
Less		
Transfer from Students' Infirmary of all unpaid accounts		11,294.74
		$187,048.50

[Schedule No. 2]

INCOME FROM UNITED STATES

Adams Fund	$15,000.00
Hatch Fund	15,000.00
Smith Lever Fund	30,235.33
Morrill College Aid Fund	50,000.00
	$110,235.33

[Schedule No. 3]

STATE APPROPRIATIONS

State University Fund:		
For general purposes	$980,818.71	
For Permanent Building Fund	83,550.00	
For scholarships	3,500.00	
		$1,067,868.71
General support		200,000.00
University Building Bonds		1,324,876.68
Agriculture		350,000.00
Insecticide and Fungicide Control		5,000.00
Scripps Institution for Biological Research		12,500.08
Citrus Experiment Station, buildings and lands		120,795.88
University Farm buildings		563.61
Chemistry, Petroleum and Scientific Research		1,840.91
State Council of Defense		3,227.41
University Extension		20,000.00
		$3,106,673.28

[Schedule No. 4]

STUDENTS' FEES AND DEPOSITS

Agriculture	$1,368.10
Anatomy	57.50
Astronomy	427.50
Bacteriology	2,170.39
Bio-chemistry	197.45
Botany	1,474.00
Changing Courses	2,787.00
Civil Engineering	3,214.47
Chemistry	17,307.36
Delayed Registration	1,407.00
Diplomas	12.50
Drawing	74.00
Dentistry	28,504.60
Dentistry—Special Account	992.60
Gymnasium Suits	1,168.74
Gymnasium Fees	23,143.84
Gymnasium Fines	9.00
History I	1,131.00
Household Economics	503.74
Library	315.00
ntersession Fees	2,640.25
Law Library	3,975.00
Mechanics	2,259.56
Mineralogy	364.50
Military Uniforms	21.50
Mining	591.90
Medical Department, San Francisco	19,903.72
Medical Department, Los Angeles	2,325.00
Medical Appointment Fees	84.00
Non-resident	7,265.00
Physics	5,792.44
Physiology	520.80
Special Examinations	2,080.00
Students' Infirmary Fees	34,417.49
Stenography and Typewriting	1,105.00
Zoology	1,666.08
Summer Session Fees	81,873.44
University Extension	38,013.10
University Extension—Dentistry	884.11
	$292,048.68

[Schedule No. 5]

CLINICS OF HOSPITALS AND INFIRMARY

University Hospital, San Francisco	$50,057.22
Medical Department, Los Angeles	5,166.62
Students' Infirmary	10,176.24
Dentistry Department, San Francisco	15,307.39
	$80,707.47

[Schedule No. 6]

DEPARTMENTAL SALES, ETC., RECEIPTS

Agricultural:		
Citrus	$2,406.11	
Dairy	16,430.23	
Dairy Certification, Alameda	2,037.90	
Dairy Certification, San Francisco	2,360.20	
Fertilizer Control	11,752.10	
Floriculture	369.94	
Hog Cholera Serum	27,699.05	
Imperial	586.90	
Insecticide and Fungicide Registrations	2.00	
Kearney Experiment Station	398.50	
Official Advanced Registry tests	13,156.69	
Viticulture	533.49	
Veterinary	2,387.97	
Soil Survey	3.00	
Hog Serum Licenses	61.50	
Agricultural Directors	49.13	
University Farm Income	124,484.70	
		$204,719.41
Various:		
Sale of publications	$2,735.87	
Sale of Lick Observatory publications	101.95	
Sale of syllabi	1,471.81	
Sale of Music syllabi	54.30	
Sale of Keeler volume	8.00	
Sale of syllabi, etc., History I	337.00	
Library exchange	20.00	
Sale of equipment, Los Angeles	10.00	
Academy of Pacific Coast History	43.16	
Music and Dramatic	3,053.50	
Scripps Institution—Miscellaneous receipts	6,423.49	
Rents of cottages and lands	1,928.06	
Sather Tower receipts, less maintenance	697.90	
Sale of cartridge shells	342.92	
Sale of syllabi, Weinstock Lectures	9.16	
Sale of manufactures, Wilmerding School	241.89	
Profit from Printing Department	3,655.94	
Sale of animals from Rabbitry	305.45	
Forward	$21,440.40	$204,719.41

[**Schedule No. 6**—*Continued*]

Carried forward	$21,440.40	$204,719.41
Profit from Storehouse	719.31	
Interest on Students' Infirmary notes	244.80	
Sale of wood, etc	440.85	
Library Fines	580.25	
Interest on daily cash balances	7,339.14	
Refund on items written off	188.67	
		30,953.42
		$235,672.83

[Schedule No. 7]

INCOME FROM INVESTMENTS

Mortgage interest	$54,132.83
Bond interest	70,601.36
Dividends on stocks	13,316.00
Rents from investment property	52,967.51
Interest on Hooper Fund expenditures	23,000.63
Interest on moneys under-invested	5,555.41
Interest from Country Club Heights Co.	259.32
Interest from student notes	561.63
	$220,394.69

[Schedule No. 8]

GIFTS

For Current Use:	
Miss A. M. Alexander, Museum of Vertebrate Zoology	$12,037.00
Miss A. M. Alexander, equipment	250.00
Mrs. Phoebe A. Hearst, Architecture	1,000.00
Mrs. Phoebe A. Hearst, Anthropology	1,680.00
Mrs. Phoebe A. Hearst, frames and cases for Anthropological Museum	508.85
Mrs. Phoebe A. Hearst, Scholarships	2,400.00
Carnegie Foundation, for advancement of Teaching	20,432.10
Estate of D. O. Mills, Lick Observatory	3,250.00
Jas. D. Phelan, publication	1,500.00
Miss Ellen B. Scripps, Institution for Biological Research	9,000.00
E. W. Scripps, Institution for Biological Research	1,500.00
A Friend, Palaeontology	2,400.00
Mrs. A. F. Morrison, Ophthalmological Library	1,500.00
Riverside Orange Co., Citrus Experiment Station	2,300.00
Mrs. E. A. Drexler, University Hospital	2,400.00
Patients, University Hospital	10.00
W. H. Crocker, Zoology	600.00
A Friend, Medicine	300.00
J. K. Moffitt, Medicine	100.00
J. K. Moffitt, Bio-chemistry	100.00
Harry E. Miller, Bio-chemistry	250.00
F. W. Bradley, Bio-chemistry	250.00
C. W. Merrill, Bio-chemistry	100.00
Gordon Blanding, Chile Observatory	1,000.00
W. B. Bourn, Chile Observatory	1,000.00
A. B. Spreckels, Chile Observatory	500.00
F. W. Bradley, Chile Observatory	500.00
A Friend, Pathology	250.00
F. W. Fish, Pathology	100.00
J. K. Moffitt, Pathology	250.00
American Association for Advancement of Science, Pathology	500.00
Forward	$67,967.95

[**Schedule No. 8**—*Continued*]

Carried forward	$67,967.95	
California State Dental Association, Dental Department	300.00	
Per H. G. Chappel, grinding machine for Dental Department	137.00	
F. S. Juilliard, marble chair for Greek Theatre	350.00	
Class of 1891, marble chair for Greek Theatre	350.00	
Frank P. Nutting, College of Commerce	50.00	
Alumna of 1910, Alumna Scholarship	250.00	
State Rivers and Water Supply, Australian Scholarship	712.62	
P. E. Bowles, LeConte Fellowship	63.70	
A. Bonnheim, Scholarship	340.00	
A. Bonnheim, Prize	90.00	
R. J. Taussig, Bryce Historical Essay Prize	100.00	
Native Sons of the Golden West, Scholarship	3,000.00	
San Jose High School, Scholarship	125.00	
Levi Strauss, Scholarship	3,500.00	
Swedish-American Patriotic League, Scholarship	250.00	
Presbyterian Church, Scholarship	550.00	
Chi Omega Fraternity, Scholarship	25.00	
Alumni of Medical School, William Watt Kerr Scholarship	380.00	
Per Mrs. Koshland, Menorah Prize	100.00	
Newman Hall, Essay Prize	100.00	
Per H. L. Mack, Commerce Department	50.00	
Prytanean Society, Students' Infirmary	50.00	
		$78,841.27
For Buildings and Improvements:		
Miss Ellen B. Scripps, Buildings at La Jolla	1,350.00	
Mrs. Phoebe A. Hearst, Mining Building equipment	1,923.28	
A. A. Towne, University Hospital equipment	2,377.11	
		5,650.39
For Additions to Funds:		
Class of 1886, Class of 1886 Loan Fund	200.00	
Class of 1916, Class of 1916 Fund	1,400.00	
G. A. Fish, E. Claypole Research Fund	10.00	
Estate of W. R. Davis, W. R. Davis Scholarship Fund	6,000.00	
Forward	$7,610.00	$84,491.66

[Schedule No. 8—*Continued*]

Carried forward	$7,610.00	$84,491.66
Xi Psi Phi Alumni, Dental Loan Fund	150.00	
A. M. and M. L. Hilgard, Hilgard Fund	32,500.00	
George H. Howison, Howison Foundation	75,000.00	
Mrs. M. A. Lawton, Wm. Watt Kerr Memorial Loan Fund	2,000.00	
F. W. Bradley, Mining Students' Loan Fund	1,000.00	
Mrs. F. Smith, Napa Seminary Loan Fund	100.00	
Estate of Bernard Nathan, B. Nathan Scholarship Fund	5,000.00	
Dr. A. M. Walcott, Walcott Loan Fund	300.00	
Kearney Vineyard Syndicate, University Endowment	145.64	
		123,805.64
For University Hospital Building:		
Selah Chamberlain	4,625.00	
Morris Meyerfeld, Jr.	450.00	
A. Fleishhacker Co.	875.00	
W. H. Crocker	8,750.00	
Adolfo Stahl	437.50	
F. M. Fontana	87.50	
J. J. Mack	175.00	
P. E. Bowles	2,250.00	
C. Frederick Kohl	7,500.00	
Jeanette A. Jordan	875.00	
		26,025.00
		$234,322.30

[Schedule No. 9]

ADMINISTRATION, MAINTENANCE AND OPERATION

Administration salaries	$53,715.80
Advisors	252.00
Affiliated Colleges, repairs	696.40
Affiliated Colleges, site	880.94
Affiliated Colleges, watchman	1,294.50
Armorers	2,297.50
Auditing	2,045.00
Administration, assistance	26,740.59
Administration, printing	14,163.00
Comptroller's Office, assistance	35,277.74
Examination of schools	3,020.85
Expense	15,652.63
Fuel	1,172.76
Heating and lighting	51,557.23
Janitors	45,316.90
Postage	5,331.38
President's Contingent	3,000.00
Publications	17,951.46
Rabbitry	1,120.50
Repairs	19,102.78
Site	23,874.09
Stationery	2,070.89
Telephone, telegraph and express	7,180.85
Traveling	3,063.69
Water	8,950.23
Cash—Overs and shorts	59.93
University Building Bonds, general charges	4,327.07
Students' Gymnasium	20,669.88
Suspense Account commission on rental	287.00
Students' Infirmary	41,411.81
Removal of P. P. I. E. exhibits	187.40
Retiring allowances	925.62
Alumni Association	3,000.00
Interest on notes to Warren Olney, Jr., for property at Telegraph and Allston Way	2,700.00
Turner Mortgage expenses	189.75
Ambulance Corps, Farewell expense	235.10
Hahnemann Medical College	88.89
	$419,812.16

[Schedule No. 10]

NEW BUILDINGS AND IMPROVEMENTS

In Berkeley:		
Aeronautics Building	$3,998.47	
College Avenue Bridge	3,358.69	
Sather Tower construction	5,903.11	
Chemistry Building	144,859.72	
Benjamin Ide Wheeler Hall	430,596.67	
Domestic Science Building	2,118.79	
Filter Plant, Strawberry Cañon	1,576.41	
Hilgard Hall	226,828.11	
North Hall demolition	632.75	
Mining Building alterations	60.05	
Philosophy Building removal	4,324.35	
Physiology Building alterations	1,485.00	
Physiology Building, Animal Yard	653.90	
Printing Office, new building	59.10	
Power Plant addition	78,001.89	
Sather Tower Esplanade	22,348.43	
Tree planting and trail making	3,449.20	
Surfacing roads	17.50	
University Library additions	401,847.13	
Storehouse Building	10,122.22	
Chemistry Building furnishings	2,183.35	
President's House, furnishings	255.60	
Printing Office, equipment	6,679.11	
Wheeler Hall, furnishings	18,400.13	
Hilgard Hall, furnishings	16,948.88	
Library, furnishings	883.73	
Vertebrate Zoology, equipment	850.00	
Marble chairs at Greek Theatre	560.44	
Removing Inspector's Office	478.35	
Mechanics' special equipment	4,567.66	
		1,394,048.74
Not in Berkeley:		
University Hospital Building	$286,488.96	
University Hospital, furnishings	26,898.67	
University Hospital, alterations for Physiology	56.05	
Dentistry Building, alterations	29,940.98	
Buildings at La Jolla	209.54	
Forward	$343,594.20	$1,394,048.74

Schedule No. 10—*Continued*]

Carried forward	$343,594.20	$1,394,048.74
Whitaker Forest, fencing	850.00	
Wilmerding School	6,339.78	
Affiliated Colleges handball courts	838.80	
Class Room Building, University Farm	231.57	
Dining Hall addition, University Farm	245.04	
Small buildings, University Farm	87.00	
Citrus Experiment Station, buildings	24,051.70	
Citrus Experiment Station, laboratory	95,143.08	
Citrus Experiment Station, lands	1,601.10	
Citrus Experiment Station, pumping plant, etc.	2,300.00	
		475,282.27
		$1,869,331.01

[Schedule No. 11]

EDUCATION AND RESEARCH

Various Departments at Berkeley:		
Expenditures from general funds	$880,540.85	
Expenditures from donations	52,127.54	
Expenditures from endowment funds	78,095.23	
Expenditures from Morrill College Aid Fund	22,500.32	
		1,033,263.94
University Hospital:		
Expenditures from general funds	$79,765.43	
Expenditures from hospital receipts	50,057.22	
Expenditures from Endowment Fund income	9,013.19	
Expenditures from donations	2,470.50	
		141,306.34
Agricultural Departments:		
Expenditures from general funds	$84,999.88	
Expenditures from Adams Fund	15,000.00	
Expenditures from Hatch Fund	15,000.00	
Expenditures from Smith Lever Fund—Federal	30,235.33	
Expenditures from Smith Lever Fund—State	20,235.33	
Expenditures from Morrill College Aid Fund	27,499.68	
Expenditures from State appropriations	355,000.00	
Expenditures from donations	3.55	
		547,973.77
University Extension	$36,368.74	
University Extension—State appropriation	20,000.00	
University Extension—Dentistry	808.74	
Lick Observatory	34,432.23	
Scripps Institution for Biological Research	32,071.24	
		123,680.95
Purchase of Library books out of donations and endowment funds	7,773.77	
Summer Session expenditures	80,469.01	
Intersession expenditures	1,999.61	
Los Angeles Medical Department	11,692.99	
Los Angeles Medical Department Dispensary	5,139.60	
Hooper Foundation, research expenses	44,172.86	
Hooper Foundation, biological research expenses	1,023.73	
		152,271.57
		$1,998,496.57

[**Schedule No. 11** (*a*)]

RESEARCH AND OTHER EXPENSES IN CONNECTION WITH WAR DEPARTMENT

eronautics	$3,252.23
hemistry research	169.00
etroleum research	1,026.87
cientific research	645.04
tate Council of Defense	3,227.41
ederal Council of Defense	230.44
. S. War Department Aviation Conference	701.40
ilitary census	370.08
	$9,622.47

[Schedule No. 12]

DISBURSEMENTS FROM CLASS FUNDS, SCHOLARSHIPS, FELLOWSHIPS AND PRIZES

F. M. Anderson Graduate Fellowship	$500.00
Alumna Scholarship	125.00
C. Allen Scholarship	125.00
Bonnheim Scholarship	4,660.00
Australian Scholarship	712.62
P. Chas. Cole Scholarship	125.00
W. R. Davis Scholarship	325.00
Dolbeer Scholarship	800.00
Helen Du Bois Scholarship	250.00
J. M. Goewey Scholarship	1,200.00
E. Gates Scholarship	300.00
Phoebe A. Hearst Scholarship	2,520.00
C. B. Houghton Scholarship	160.00
C. M. Jones Scholarship	4,700.00
A. S. Johnston Scholarship	175.00
Paget Scholarship	300.00
F. M. Pixley Scholarship	300.00
Presbyterian Church Scholarship	550.00
San Jose High School Scholarship	125.00
San Francisco Girls' Union Scholarship	350.00
S. Sanborn Scholarship	750.00
State of California Scholarship	3,287.50
H. Stebbins Scholarship	200.00
William Watt Kerr Scholarship	400.00
Swedish-American Patriotic League Scholarship	187.50
Levi Strauss Scholarship	3,612.50
Bertha H. Taussig Scholarship	500.00
W. D. Thompson Scholarship	3,002.40
Dohrmann Memorial Loan Fund	150.00
M. Kellogg Fellowship	1,099.96
T. F. Colin European Fellowship	500.00
LeConte Fellowship	500.00
University Fellowship	4,000.00
Whiting Fellowship	1,200.00
Native Sons of the Golden West Fellowship	3,005.00
Undergraduate Scholarship	62.50
Bonnheim Prize	340.00
Bennett Prize	30.00
Forward	$41,129.98

[**Schedule No. 12**—*Continued*]

Carried forward	$41,129.98
Bryce Historical Essay Prize	100.00
E. C. Cook Prize	100.00
Newman Hall Essay Prize	100.00
Menorah Prize	100.00
Irving Prize	25.00
Richardson Latin Translation Prize	75.00
Congregation Emanu El	100.00
Medal	132.00
Payments to class secretaries and others	738.43
Howison Annuity	2,634.57
Hilgard Annuity	3,002.59
	$48,237.57

[Schedule No. 13]

DEPARTMENTAL SALES, ETC., EXPENDITURES

Agricultural:	
Agriculture Extension	$24.68
Agriculture Directors	20.91
Citrus	1,786.89
Dairy	15,663.16
Dairy Certification, Alameda	2,321.91
Dairy Certification, San Francisco	2,249.66
Fertilizer Control	10,981.51
Floriculture	348.90
Hog Cholera Serum	29,734.76
Imperial	284.30
Insecticide and Fungicide registration	1.35
Kearney Experiment Station	396.41
Nutrition	13.82
Photographic	546.46
Official Advanced Registry tests	13,483.74
Soil Survey	19.45
Viticulture	818.54
Veterinary	1,373.49
University Farm income	125,918.87
Citrus Experiment Station planting	4,753.93
Various:	
Sale of ''Zoe''	8.12
Music and Dramatic	4,980.98
Tebtunis Papyri	12.06
Scripps Institution, sale of Agassiz	16.00
	$215,759.90

[Schedule No. 14]

NET ADDITIONS TO ENDOWMENT FUNDS

Donations to funds (Schedule No. 8)	$123,805.64	
Fund income, credited to funds	8,897.08	
Interest on notes, credited to funds	504.93	
		$133,207.65
Less deductions for expenditures in excess of income:		
Bennett Prize Fund	2.33	
E. C. Cook Prize Fund	49.22	
Wilmerding Endowment Fund	7,200.51	
Sather Fund for Esplanade	2,428.69	
		9,680.75
Net increase in funds		$123,526.90
Reconciliation of Endowment Funds as shown on Balance Sheet:		
Endowment Funds at June 30, 1916	$5,532,606.55	
Increases as above	123,526.90	
		$5,656,133.45
Less Forestus Phelps Memorial Fund (Realty Union Investment Certificate returned to donor)	6,000.00	
University Hospital Endowment Fund (J. B. Reinstein note written off)	1,000.00	
		7,000.00
		$5,649,133.45
Less University Hospital Building Fund, the expenditures for which are in excess of donations	162,334.53	
Sather Esplanade expenditures	19,919.74	
Sather Tower expenditures	5,903.11	
		188,157.38
Funds as per Balance Sheet		$5,460,976.07

[Schedule No. 15]

INCOME AND EXPENDITURES PRIOR TO JUNE 30, 1917, CARRIED FORWARD

Income:	
Agricultural Department sales	$10,194.61
Fund interest accounts	35,837.93
Scholarships and prizes	1,673.05
Donations	31,774.37
Miscellaneous	78,440.45
Jane K. Sather Fund for Tower	15,137.38
	$173,057.79
Expenditures:	
Construction accounts	$57,235.42
Hooper Foundation Research expenses	128,479.77
State Appropriation Suspense Account	89,107.50
University Hospital Building Fund	97,262.29
	$372,084.98

STATISTICS OF THE INFIRMARY

COMPILED BY THE UNIVERSITY PHYSICIAN

INFIRMARY SUMMARIES

(August 18, 1916–May 16, 1917)

DISPENSARY

	Men	Women	Total
Individuals treated	2,762	2,152	4,914
Number of treatments	29,020	16,139	45,159
Number of diagnoses	8,397	5,448	13,845
Number of smallpox vaccinations	284	273	557
Number of typhoid vaccinations	139	59	198
Number of typhoid skin tests	136	46	182
Number of students entitled to treatment during year			6,780
Number of days open			271
Average number of patients treated daily			166.6
Average number of treatments per patient			9.1
Percentage of students treated			72%

HOUSE PATIENTS

	Men	Women	Total
Discharged—			
Well	329	233	562
Relieved	398	78	476
Not relieved	10	30	40
Total number of Infirmary days			5,215
Number of days open			271
Total number of diagnoses			1,066
Total number of individuals			874
Students who were in the Infirmary more than once during the year			170
Average stay in days			59.6
Average number of patients per day			19.2
Largest number of patients in one day			48
Surgical cases			346
Operations			215
Anaesthesia (General)			145
Patients examined by X-ray			266
Prescriptions			564
Laboratory reports—			
Urine analyses			1,264
Throat cultures			209
Sputum			101
Blood cultures			299
Feces			20
Stomach			9
Urethral and prostatic smears			77
Miscellaneous			19

UNIVERSITY OF CALIFORNIA INFIRMARY

DENTAL DEPARTMENT

(May 1, 1916–May 1, 1917)

	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Total
Prophylaxis	51	26	43	17	40	36	31	31	28	18	26	27	374
Treatment $AgNO_3$	1	....	....	....	5	5	3	....	....	2	2	2	20
Treatment As_2O_3	2	1	6	1	8	6	9	6	6	19	7	10	81
Treatment, Cinnamon-Phenol	6	....	4	2	14	17	4	2	9	16	12	8	94
Treatment, Desensitizing Paste	....	....	1	3	4	10	4	4	6	7	1	2	42
Treatment, Formo-Cresol	2	2	6	1	8	18	7	3	9	27	31	26	140
Treatments, miscellaneous	10	2	6	4	16	19	14	10	9	13	16	5	124
Cavity preparation	10	5	10	3	41	42	23	18	37	32	34	20	275
Fillings, Gutta percha	....	2	6	1	5	6	10	10	6	6	....	1	53
Fillings, Temporary cement	8	....	1	....	6	7	4	4	4	11	9	7	61
Fillings, Cement	13	....	4	2	13	2	3	13	9	7	5	6	77
Fillings, Synthetic	26	11	8	14	19	22	19	24	20	10	17	26	230
Fillings, Amalgam	94	36	43	26	88	71	101	100	60	70	90	73	922
Fillings, Inlay (gold)	7	3	6	5	16	19	16	8	18	7	15	10	126
Fillings, Malletted (gold)	1	3	1	....	7	2	1	1	2	1	7	....	26
Crown, Shell	2	1	1	....	2	7	6	7	....	1	3	....	30
Crown, with dowell	1	1	1	....	....	....	1	1	2	1	1	1	10
Bridge	....	....	1	....	....	4	1	....	....	3	1	....	10
Pulp removal As_2O_3	4	2	3	2	7	4	12	6	3	7	9	5	64
Pulp removal, cocaine	4	2	2	10	5	6	....	5	4	7	1	....	46
Pulp removal, novocaine	1	1	....	....	....	....	1	....	3	....	4	1	11

	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Total
Root canal filling	12	4	7	3	17	18	18	14	9	15	21	14	149
Abscess, Acute alveolar	....	....	....	....	....	2	1	....	2	1	2	2	10
Abscess, Chronic	....	2	3	....	10	2	4	....	1	4	4	3	33
Abscess, Putrescent pulp	1	....	3	....	2	4	3	....	1	4	1	1	20
X-ray films	11	14	15	5	21	31	23	22	32	12	21	19	226
X-ray plates	....	1	1	1	....	....	....	2	5	5	11	12	38
Extraction, general anaesthetic	5	1	5	1	1	....	1	3	6	5	1	....	29
Extraction, novocaine	6	1	10	6	13	11	26	12	19	16	24	17	168
Root amputation	....	....	1	....	4	2	....	1	2	....	2	5	17
Replantation	....	....	....	....	....	....	....	....	1	....	1	....	2
Abscess lancing	....	2	....	....	1	2	1	1	2	....	....	1	10
Third molar lancing	1	....	1	....	1	5	10	1	2	4	5	3	33
Third molar inflammation	....	....	1	....	1	1	1	....	....	....	1	....	5
Empyema of antrum	....	....	....	....	....	1	....	....	1	....	....	....	2
Capping of pulp	1	....	....	....	....	1	....	....	....	....	....	....	2
Acute pericementitis	1	....	....	....	1	1	....	....	....	....	....	....	3
Hyperemia, Arterial	1	....	....	....	....	....	....	....	....	....	....	....	1
Hyperemia, Venous	1	....	1	....	....	....	....	1	....	....	....	....	3
Gingivitis	4	....	3	2	4	1	1	3	6	1	....	2	27
Pyorrhoea	....	....	....	1	....	....	2	....	....	1	1	....	5
Resets	1	....	3	1	2	2	5	2	....	1	1	....	18
Operations, miscellaneous	....	....	....	1	3	1	....	....	....	....	....	....	5

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MEN AND WOMEN

Diseases	Dispensary Patients			House Patients		
	Men	Women	Total	Men	Women	Total
I. General Diseases:						
(International Classification)						
1. Typhoid fever						
Anti-typhoid inoculation	139	59	198	......	......	......
Typhoid skin test	136	46	182	......	......	......
4. Malaria	1	2	3	2	2	4
6. Measles	27	5	32	97	1	98
7. Scarlet fever	1	2	3	2	4	6
9. Diphtheria	......	......	......	2	......	2
Diphtheria carrier	......	......	......	5	......	5
10. Influenza	1	......	1	......	......	......
19. Other epidemic diseases—						
Chicken-pox	3	......	3	4	1	5
German measles	1	16	17	1	29	30
Mumps	34	9	43	67	16	83
Vaccination—						
Vaccinia	217	238	455	8	1	9
Vaccinoid	41	22	63	......	......	......
Reaction of immunity	26	13	39	......	......	......
28. Tuberculosis of lungs	3	6	9	4	9	13
Tuberculosis of pleura	......	......	......	......	1	1
34. Tuberculosis of other organs—						
Tuberculosis of eye	......	......	......	1	......	1
Tuberculosis of bladder	1	......	1	1	......	1
Tuberculosis of kidney	1	......	1	1	......	1
36. Rickets.						
36. (*c*) Curvature of spine—						
Scoliosis	......	6	6	......	......	......
Kyphosis (postural)	......	1	1	......	......	......
37. Syphilis	7	......	7	4	......	4
38. Gonococcus infection—						
38. (*a*) Chancroid of—						
Penis	1	......	1	......	......	......
38. (*b*) Gonococcus infection of—						
Epididymis	1	......	1	1	......	1
Prostate	......	......	......	2	......	2
Urethra	35	......	35	1	......	1
46. Other tumors—						
Tumor of—						
Breast	......	1	1	......	1	1
Cheek	1	......	1	......	......	......
Coccyx	1	......	1	......	......	......
Thigh	......	1	1	......	......	......
Cyst—						
Lip	1	......	1	......	......	......
Neck	1	......	1	......	......	......
Lipoma	......	1	1	......	......	......
Papilloma, operation for	1	......	1	......	......	......
Sebaceous	24	5	29	......	......	......

INFIRMARY REPORT, 1916–17—(*Continued*)

MEN AND WOMEN

	Dispensary Patients			House Patients		
Diseases	Men	Women	Total	Men	Women	Total
47. Acute articular rheumatism	1	......	1	1	......	1
48. Chronic rheumatism	3	......	3	......	......	......
51. Exophthalmic goitre	......	......	......	......	1	1
54. Anaemia	......	24	24	......	......	......
55. Other general diseases—						
Obesity	......	1	1	......	......	......
II. DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSE:						
61. Simple meningitis—						
Syphilitic meningitis	......	......	......	1	......	1
66. Paralysis without specified cause—						
Paralysis of—						
Arm	......	1	1	......	......	......
Foot	1	......	1	......	......	......
68. Other forms of mental alienation—						
Constitutional psychopathic state	......	......	......	......	1	1
Dementia praecox	......	1	1	......	1	1
Nostalgia	......	1	1	......	......	......
Psychasthenia	......	1	1	......	4	4
69. Epilepsy	......	1	1	......	......	......
73. Neuralgia and neuritis—						
Hysteria	......	2	2	......	1	1
Neuralgia	19	12	31	......	......	......
Neuritis	2	3	5	......	......	......
74. Other diseases of the nervous system—						
Angioneurotic oedema	......	1	1	......	1	1
Migraine	2	......	2	......	......	......
Neurasthenia	11	40	51	1	7	8
Syncope	......	6	6	1	3	4
Vertigo	2	1	3	1	......	1
75. Diseases of the eyes and their adnexa—						
(*a*) Conjunctivitis—						
Acute	97	39	136	3	......	3
Chronic	7	......	7	......	......	......
Follicular	......	1	1	......	......	......
Phlyctenular	1	1	2	......	......	......
(*c*) Other diseases of the eyes and their adnexa—						
Astigmatism—						
Simple hyperopic	32	17	49	......	......	......
Compound hyperopic	90	75	165	......	......	......
Simple myopic	26	22	48	......	......	......
Compound myopic	28	34	62	......	......	......
Mixed	7	8	15	......	......	......
Irregular	......	1	1	......	......	......
Blepharitis	11	14	25	1	......	1

INFIRMARY REPORT, 1916–17—(*Continued*)

MEN AND WOMEN

	Dispensary Patients			House Patients		
Diseases	Men	Women	Total	Men	Women	Total
Chalazion, operation for	......	3	3	......	......	......
Episcleritis	......	1	1	......	......	......
Exophoria	7	2	9	......	......	......
Foreign body	11	2	13	......	......	......
Hordeolum	43	24	67	......	......	......
Hyperopia	34	40	74	......	......	......
Iritis	2	1	3	......	......	......
Iridocyclitis	......	......	......	3	......	3
Keratitis, phlyctenular	2	......	2	......	......	......
Myopia	13	8	21	......	......	......
Optic neuritis	1	......	1	......	......	......
Presbyopia	1	......	1	......	......	......
Retinitis, chronic	1	......	1	......	......	......
Strabismus	1	......	1	......	......	......
Ulcer, corneal	5	......	5	3	......	3
76. Diseases of the ears—						
Cerumen, accumulation of	93	58	151	......	......	......
Ear drum—						
Perforated	1	......	1	......	......	......
Rupture of	2	......	2	......	......	......
Eustachian salpingitis	5	1	6	......	1	1
Haematoma	6	......	6	......	......	......
Labyrinth irritation	......	......	......	......	2	2
Myringitis	17	5	22	......	......	......
Otitis media, acute	13	12	25	2	4	6
Otitis media, chronic	......	......	......	1	......	1
Traumatic rupture of tympanic membrane	2	......	2	......	......	......
III. Diseases of the Circulatory System:						
78. Acute endocarditis—						
Endocarditis, acute	1	5	6	......	......	......
Myocarditis, acute	......	1	1	......	......	......
79. Organic diseases of the heart—						
(*a*) Valvular disease, chronic cardiac	1	3	4	......	......	......
(*b*) Endocarditis, chronic	......	6	6	......	1	1
(*c*) Arrhythmia	......	2	2	......	......	......
Dilatation	......	2	2	......	......	......
Functional heart	......	1	1	......	......	......
Mitral regurgitation	......	1	1	......	......	......
80. Angina pectoris—						
Pseudo pectoris	......	1	1	......	......	......
83. Diseases of the veins—						
Haemorrhoids	26	8	34	1	......	1
Haemorrhoids, operation for	......	......	......	4	......	4
Haemorrhoids, post operation	......	......	......	1	......	1
Varicocele	3	......	3	......	......	......
Varicocele, operation for	......	......	......	2	......	2

INFIRMARY REPORT, 1916–17—(*Continued*)

MEN AND WOMEN

Diseases	Dispensary Patients			House Patients		
	Men	Women	Total	Men	Women	Total
Varicose veins	2	1	3	......	......	......
Varicose veins, operation for	......	......	......	2	......	2
84. Diseases of the lymphatic system—						
Lymphadenitis	2	1	3	......	......	......
Lymphangitis	6	......	6	2	......	2
85. Haemorrhage—						
Epistaxis	13	12	25	......	......	......
Heart block	......	1	1	......	......	......
Palpitation	......	3	3	......	......	......
Tachycardia	......	1	1	......	......	......
IV. DISEASES OF THE RESPIRATORY SYSTEM:						
86. Diseases of the nasal fossae—						
Adenoids	2	1	3	......	......	......
Adenoids, operation for	......	......	......	4	5	9
Catarrh, tubotympanic	2	1	3	......	......	......
Submucous resection for deviated septum	29	7	36	21	5	26
Ozena	2	......	2	......	......	......
Polypus, operation for	3	3	6	......	......	......
Rhinitis—						
Acute	1430	1115	2545	3	2	5
Atrophic	......	1	1	......	......	......
Chronic catarrhal	7	20	27	......	......	......
Hypertrophic	1	......	1	......	......	......
Turgescent	2	1	3	......	......	......
Septum spur, operation for	7	2	9	2	......	2
Turbinate, operation for	4	1	5	2	1	3
Ulcer, nose	1	1	2	......	......	......
87. Diseases of the larynx—						
Laryngitis, acute	71	121	192	2	1	3
Laryngitis, chronic catarrhal	2	......	2	......	......	......
88. Diseases of the thyroid body—						
Adenitis—						
Axillary	3	......	3	......	......	......
Cervical	7	21	28	2	3	5
Inguinal	10	......	10	......	......	......
Occipital	......	1	1	......	......	......
Tubercular	......	......	......	1	......	1
Hypertrophied thyroid	......	6	6	......	......	......
Hyperthyroidism	......	17	17	......	2	2
Thyroiditis	......	1	1	......	2	2
89. Acute bronchitis—						
Bronchitis, acute	40	10	50	13	3	16
Tracheitis	563	234	797	38	12	50
90. Chronic bronchitis—						
Bronchitis, chronic	4	......	4	......	......	......

INFIRMARY REPORT, 1916–17—(*Continued*)

MEN AND WOMEN

	Dispensary Patients			House Patients		
Diseases	Men	Women	Total	Men	Women	Total
92. Pneumonia—						
Pneumonia, lobar	......	......	......	2	......	2
93. Pleurisy—						
Pleurisy	7	10	17	3	2	5
Pleurisy, with effusion	......	......	......	......	1	1
Pneumothorax	......	1	1	......	1	1
96. Asthma	3	9	12	1	3	4
98. Other diseases of the respiratory System—						
Hay fever	1	5	6	......	......	......
V. DISEASES OF THE DIGESTIVE SYSTEM:						
99. Diseases of the mouth and adnexa—						
(*a*) Diseases of the teeth and gums—						
Abscess, alveolar	1	1	2	6	7	13
Caries	1	......	1	......	......	......
Empyema	......	......	......	1	......	1
Eruption of third molar	......	1	1	......	1	1
Gingivitis	......	1	1	......	......	......
Impacted third molar	......	......	......	1	2	3
Infected teeth	......	......	......	2	1	3
Extraction of teeth	......	......	......	1	......	1
(*b*) Other diseases of the mouth and adnexa—						
Stomatitis	39	21	60	1	1	2
Ulcer of mouth	1	......	1	......	......	......
100. Diseases of the pharynx—						
Abscess, tonsillar	1	1	2	1	3	4
Amygdalolith	1	2	3	......	......	......
Amygdalolith, operation for	......	2	2	......	......	......
Amygdalitis, acute	448	245	693	30	24	54
Amygdalitis, chronic	8	27	35	......	......	......
Amygdalitis, operation for	......	......	......	50	34	84
Elongation of uvula	......	1	1	......	......	......
Elongation of uvula, operation for	......	1	1	......	......	......
Globus hystericus	......	1	1	......	......	......
Hypertrophy of tonsil	......	2	2	......	......	......
Ulcer, tonsil	1	......	1	......	......	......
Ulcer, over uvula	......	1	1	......	......	......
Pharyngitis, acute	1432	710	2142	128	41	169
Pharyngitis, chronic	2	22	24	......	......	......
103. Other diseases of the stomach—						
Achylia gastrica	......	......	......	1	......	1
Fermentation, gastric	13	3	16	4	......	4
Gastritis	19	4	23	7	......	7
Hyperchlorhydria	2	8	10	2	......	2
Nervous dyspepsia	......	......	......	......	1	1

INFIRMARY REPORT, 1916–17—(*Continued*)

MEN AND WOMEN

Diseases	Dispensary Patients			House Patients		
	Men	Women	Total	Men	Women	Total
105. Diarrhoea and enteritis—						
(*b*) Colitis	1	2	3	......	1	1
Duodenitis	......	......	......	1	......	1
Enteritis	51	17	68	10	2	12
Gastroduodenitis	3	62	65	1	7	8
Fermentation, intestinal	2	11	13	......	......	......
107. Intestinal parasites—						
Taenia saginata	1	......	1	1	......	1
108. Appendicitis—						
Appendicitis, acute	12	3	15	9	18	27
Appendicitis, chronic	6	11	17	5	2	7
Appendicitis, operation for	......	......	......	10	8	18
109. Hernias—						
Femoral, operation for	......	......	......	1	......	1
Inguinal	9	......	9	......	......	......
Inguinal, operation for	......	......	......	4	......	4
110. Diseases of the intestine—						
(*a*) Enteroptosis	......	2	2	......	......	......
Fistula in ano	1	2	3	......	2	2
Fistula in sacrum	1	......	1	1	......	1
Fistula, rectovaginal	......	1	1	......	1	1
(*b*) Other diseases of the intestine—						
Autointoxication, intestinal	28	4	32	11	3	14
Constipation	159	73	232	10	5	15
115. Other diseases of the liver—						
Cholangitis	......	2	2	......	1	1
Cholecystitis, acute	1	2	3	2	1	3
Cholecystitis, chronic	......	1	1	......	......	......
117. Simple peritonitis—						
Adhesions about stomach	......	1	1	......	......	......
Adhesions of peritonaeum	......	4	4	......	2	2
Adhesions of intestines, post operation	1	......	1	......	......	......
118. Other diseases of the digestive system—						
Pancreatitis	......	......	......	1	......	1
VI. NON-VENEREAL DISEASES OF THE GENITO-URINARY SYSTEM AND ADNEXA:						
119. Nephritis, acute	1	1	2	1	......	1
120. Bright's disease—						
Albuminuria	2	......	2	1	......	1
122. Other diseases of the kidneys and adnexa—						
Nephroptosis	......	1	1	......	......	......
Pyelitis	......	......	......	1	......	1
Stricture of ureter	......	......	......	2	......	2

INFIRMARY REPORT, 1916–17—(*Continued*)

MEN AND WOMEN

	Dispensary Patients			House Patients		
Diseases	Men	Women	Total	Men	Women	Total
124. Diseases of the bladder—						
Cystitis, acute	3	6	9	2	1	3
Neurosis of bladder	......	1	1	......	......	......
125. Incontinence of urine	......	1	1	......	......	......
125. Diseases of the urethra—						
Urethritis	16	......	16	......	......	......
126. Diseases of the prostate—						
Prostatitis, chronic	1	......	1	......	......	......
127. Non-venereal diseases of the male genital organs—						
Balanoposthitis	9	......	9	......	......	......
Epididymitis	1	......	1	......	......	......
Hypospadias	2	......	2	......	......	......
Hypospadias, operation for	......	......	......	2	......	2
Orchitis	3	......	3	1	......	1
Phimosis	2	......	2	......	......	......
Phimosis, operation for	......	......	......	9	......	9
Hydrocele, operation for	......	......	......	1	......	1
128. Uterine haemorrhage—						
Menorrhagia	......	18	18	......	......	......
Metrorrhagia	......	13	13	......	......	......
130. Other diseases of the uterus—						
(*a*) Endometritis, chronic	......	......	......	......	1	1
Endometritis, operation for	......	......	......	......	1	1
(*b*) Amenorrhoea	......	54	54	......	......	......
Anteflexion, uterus	......	3	3	......	......	......
Cervical erosion	......	5	5	......	......	......
Cervicitis	......	2	2	......	......	......
Endocervicitis	......	1	1	......	1	1
Dysmenorrhoea	......	62	62	......	5	5
Infantile uterus	......	2	2	......	......	......
Leucorrhoea	......	10	10	......	......	......
Polypi, uterus	......	1	1	......	......	......
Prolapsus, uterus	......	1	1	......	......	......
Retroflexion, uterus	......	2	2	......	......	......
Retroversion	......	3	3	......	......	......
Tumor of uterus, operation for	......	......	......	......	1	1
131. Cysts and other tumors of the ovary—						
Cyst of ovary	......	......	......	......	1	1
132. Salpingitis and other diseases of the female genital organs—						
Salpingitis	......	1	1	......	......	......
VII. THE PUERPERAL STATE:						
134. Accidents of pregnancy—						
(*a*) Pregnancy	......	1	1	......	......	......
(*b*) Abortion	......	......	......	......	1	1

INFIRMARY REPORT, 1916–17—(*Continued*)

MEN AND WOMEN

Diseases	Dispensary Patients			House Patients		
	Men	Women	Total	Men	Women	Total
VIII. DISEASES OF THE SKIN AND OF THE CELLULAR TISSUE:						
143. Furuncle—						
Carbuncle of—						
Arm	......	......	......	1	......	1
Chin	......	......	......	1	......	1
Knee	......	......	......	1	......	1
Furuncle of—						
Abdomen	2	......	2	......	......	......
Arm	12	4	16	......	......	......
Axilla	2	6	8	......	......	......
Back	3	2	5	......	......	......
Buttock	16	2	18	......	......	......
Chest	2	2	4	......	......	......
Ear	9	10	19	1	1	2
Face	62	44	106	2	1	3
Finger	2	1	3	......	......	......
Foot	4	......	4	......	......	......
Hand	4	......	4	......	......	......
Head	5	......	5	2	......	2
Hip	5	......	5	......	......	......
Knee	1	......	1	......	......	......
Leg	8	......	8	......	......	......
Neck	161	2	163	1	......	1
Nose	16	6	22	......	......	......
Penis	1	......	1	......	......	......
Scalp	9	......	9	......	......	......
Shoulder	2	4	6	......	......	......
Thigh	15	2	17	......	......	......
Toe	......	1	1	1	......	1
Vulva	......	1	1	......	......	......
Wrist	3	1	4	......	......	......
Multiple	2	......	2	......	......	......
Miscellaneous	9	......	9	......	......	......
144. Acute abscess—						
Abscess of—						
Arm	2	......	2	......	......	......
Axilla	2	......	2	......	......	......
Buttock	1	......	1	......	......	......
Chest	1	......	1	......	......	......
Ear	2	......	2	......	......	......
Eyelid	5	......	5	......	......	......
Face	6	......	6	......	......	......
Finger	17	10	27	......	......	......
Foot	2	......	2	......	......	......
Head	1	......	1	......	......	......
Heel	1	1	2	......	......	......
Knee	1	......	1	......	......	......
Leg	2	1	3	......	......	......

INFIRMARY REPORT, 1916–17—(*Continued*)

MEN AND WOMEN

Diseases	Dispensary Patients			House Patients		
	Men	Women	Total	Men	Women	Total
Neck	2	......	2	......	......	......
Nose	2	4	6	......	......	......
Penis	1	......	1	......	......	......
Rectum	2	......	2	1	......	1
Scalp	1	......	1	......	......	......
Thigh	1	......	1	......	......	......
Toe	13	7	20	......	......	......
Wrist	1	......	1	......	......	......
Miscellaneous	......	1	1	......	......	......
Cellulitis of—						
Ankle	4	......	4	3	......	3
Arm	5	......	5	6	......	6
Axilla	1	......	1	......	......	......
Breast	......	1	1	......	......	......
Ear	4	1	5	......	......	......
Elbow	7	1	8	......	......	......
Eyelid	......	1	1	......	......	......
Face	2	3	5	2	......	2
Finger	17	16	33	......	2	2
Foot	20	3	23	10	1	11
Gum	......	1	1	......	......	......
Hand	11	2	13	2	......	2
Heel	2	19	21	......	1	1
Knee	6	......	6	2	......	2
Leg	8	1	9	......	......	......
Neck	1	......	1	......	......	......
Penis	1	......	1	......	......	......
Scalp	1	......	1	......	......	......
Thigh	......	1	1	......	......	......
Toe	16	12	28	2	1	3
Wrist	1	......	1	......	......	......
Miscellaneous	5	1	6	......	......	......
Ulcer of—						
Hand	......	1	1	......	......	......
Head	......	1	1	......	......	......
145. Other diseases of the skin and adnexa—						
(*a*) Trichophytosis	72	5	77	......	......	......
(*b*) Scabies	4	9	13	......	......	......
(*c*) Other diseases of the skin—						
Acne	50	59	109	......	......	......
Alopecia areata	5	25	30	......	......	......
Callositas	8	......	8	......	......	......
Chilblain	7	35	42	......	......	......
Cicatrix of mouth	1	......	1	......	......	......
Clavus	57	45	102	......	......	......
Comedo	4	6	10	......	......	......
Dermatitis, acute	4	3	7	......	......	......
Dermatitis, exfoliativa	1	1	2	......	......	......
Dermatitis medicamentosa	2	......	2	......	......	......

INFIRMARY REPORT, 1916–17—(*Continued*)

MEN AND WOMEN

Diseases	Dispensary Patients			House Patients		
	Men	Women	Total	Men	Women	Total
Dermatitis papular	......	1	1	......	......	......
Dermatitis toxic	2	......	2	......	......	......
Dermatitis venenata	194	170	364	18	9	27
Eczema	98	29	127	1	1	2
Erythema multiforme	1	7	8	......	......	......
Erythema nodosum	......	1	1	......	......	......
Fibroma	......	2	2	......	......	......
Herpes	29	16	45	......	......	......
Hyperesthesia	1	......	1	......	......	......
Hyperidrosis	7	1	8	......	......	......
Ichthyosis	5	1	6	......	......	......
Impetigo contagiosa	47	19	66	......	......	......
Intertrigo	......	1	1	......	......	......
Keratosis	2	......	2	......	......	......
Parasitic diseases—						
Phtheiriasis	5	......	5	......	......	......
Pityriasis rosea	5	8	13	......	......	......
Pruritus ani	5	1	6	......	......	......
Psoriasis	2	3	5	......	......	......
Seborrhoea	9	37	46	......	......	......
Urticaria	24	39	63	......	......	......
Wart of—						
Arm	1	......	1	......	......	......
Face	6	......	6	......	......	......
Finger	11	17	28	......	......	......
Foot	58	17	75	......	......	......
Hand	31	16	47	......	......	......
Head	3	......	3	......	......	......
Neck	1	......	1	......	......	......
Scalp	4	......	4	......	......	......
Wrist	1	......	1	......	......	......
Miscellaneous	9	4	13	......	......	......
Multiple	......	1	1	......	......	......
Venereal wart	1	......	1	......	......	......
Nails—						
Ingrowing nail	29	10	39	......	......	......
Ingrowing nail, removal of	......	......	......	1	......	1
Ingrowing hair	4	......	4	......	......	......
Paronychia	9	19	28	......	......	......
IX. DISEASES OF THE BONES AND OF THE ORGANS OF LOCOMOTION:						
146. Diseases of the bones—						
Antral sinus	......	1	1	......	1	1
Ethmoidal sinus	1	......	1	......	2	2
Frontal sinus	16	3	19	7	1	8
Mastoid sinus (old)	......	......	......	......	1	1
Maxillary sinus	2	......	2	......	......	......
Osteomyelitis	1	1	2	......	......	......
Periostitis, acute	4	1	5	2	......	2

INFIRMARY REPORT, 1916–17—(*Continued*)

MEN AND WOMEN

Diseases	Dispensary Patients			House Patients		
	Men	Women	Total	Men	Women	Total
147. Diseases of the joints—						
Ankylosis, hip	......	1	1	......	......	......
Arthritis	4	4	8	1	1	2
Synovitis	14	3	17	5	2	7
Toxic joints	......	4	4	......	......	......
149. Other diseases of the organs of locomotion—						
Bursitis	7	9	16	1	......	1
Claw foot	1	1	2	......	......	......
Flat anterior arch	14	21	35	......	......	......
Ganglion	......	19	19	......	......	......
Hallux valgus	5	6	11	......	......	......
Hammer toe	1	1	2	......	1	1
Lumbago	4	7	11	......	......	..
Metatarsalgia	1	......	1	......	......	......
Myalgia	7	9	16	......	......	......
Myositis	20	18	38	1	......	1
One leg shorter than other	1	10	11	......	......	......
Pes planus	43	119	162	......	......	......
Pronated feet	17	76	93	......	......	......
Rheumatism, muscular	6	......	6	1	......	1
Tenosynovitis	2	7	9	......	......	......
Torticollis	1	4	5	......	......	......
Trigger toe	1	......	1	......	......	......
Wen	1	......	1	......	......	......
Wen, operation for	......	......	......	1	......	1
X. MALFORMATIONS:						
150. Congenital malformations—						
Congenital shortening of frenum	......	1	1	......	......	......
Naevus	6	6	12	......	......	......
Amputation, finger	1	......	1	1	......	1
XI. DISEASES OF EARLY INFANCY:						
152. Other diseases peculiar to early infancy—						
(*a*) Injuries at birth—						
Injury, brachial plexus	......	1	1	......	......	......
XIII. AFFECTIONS PRODUCED BY EXTERNAL CAUSES:						
164. Poisoning by food	1	7	8	......	......	......
165. Other acute poisonings—						
(*a*) Insect bite	11	22	33	......	......	......
(*b*) Antikamnia poisoning	......	1	1	......	1	1
Bichloride mercury	......	......	......	1	......	1
Bromide	1	......	1	......	......	......
167. Burns—						
Burn of—						
Arm	6	1	7	1	......	1
Chest	......	1	1	......	......	......

INFIRMARY REPORT, 1916–17—(*Continued*)

MEN AND WOMEN

	Dispensary Patients			House Patients		
Diseases	Men	Women	Total	Men	Women	Total
Ear	1	......	1	......	......	......
Eye	3	2	5	......	......	......
Eyelid	1	......	1	......	......	......
Face	2	2	4	......	......	......
Finger	12	6	18	......	......	......
Foot	2	......	2	......	......	......
Hand	12	8	20	......	......	......
Head	2	1	3	......	......	......
Leg	2	3	5	......	......	......
Lip	2	1	3	......	......	......
Mouth	1	......	1	......	......	......
Neck	2	......	2	......	......	......
Nose	......	2	2	......	......	......
Penis	2	......	2	......	......	......
Scrotum	2	......	2	......	......	......
Shoulder	2	......	2	......	......	......
Thigh	2	......	2	......	......	......
Wrist	3	......	3	......	......	......
Miscellaneous	......	......	......	......	1	1
Sunburn	3	3	6	......	......	......
171. Traumatism by cutting or piercing instruments—						
Arm	3	......	3	......	......	......
Back	8	......	2	......	......	......
Ear	1	......	1	......	......	......
Eye	......	2	2	1	......	1
Eyebrow	3	......	3	......	......	......
Eyelid	5	......	5	......	......	......
Face	17	3	20	2	......	2
Finger	62	26	88	1	......	1
Foot	4	1	5	......	......	......
Hand	19	3	22	1	......	1
Head	7	2	9	......	......	......
Kidney	......	......	......	1	......	1
Knee	6	......	6	......	......	......
Leg	1	......	1	......	......	......
Neck	......	1	1	......	......	......
Nose	3	......	3	......	......	......
Perinaeum (old)	......	1	1	......	......	......
Shoulder	3	......	3	......	......	......
Toe	2	......	2	......	......	......
Wrist	2	......	2	......	......	......
Nail, operation for	1	......	1	......	......	......
175. Traumatism by other crushing—						
Elbow	......	1	1	......	......	......
176. Injuries by animals—						
Bird bite	1	......	1	......	......	......
Cat bite	1	......	1	......	......	......
Dog bite	2	1	3	......	......	......

INFIRMARY REPORT, 1916–17—(*Continued*)

MEN AND WOMEN

	Dispensary Patients			House Patients		
Diseases	Men	Women	Total	Men	Women	Total
185. Fractures—						
(*a*) Dislocations—						
Dislocation of—						
Arm	1	......	1	1	......	1
Clavicle	2	......	2	......	......	......
Clavicular joint	2	......	2	......	......	......
Coccyx	......	1	1	......	......	......
Costal cartilage	1	......	1	......	......	......
Finger	3	1	4	......	......	......
Intra-articular cartilage	4	1	5	......	......	......
Jaw	1	......	1	......	......	......
Knee	1	......	1	1	......	1
Sacro-iliac	1	1	2	......	1	1
Shoulder	4	2	6	......	......	......
(*b*) Sprains—						
Ankle	64	45	109	2	3	5
Arch	2	6	8	......	......	......
Back	3	......	3	......	......	......
Elbow	2	......	2	1	......	1
Finger	44	8	52	......	......	......
Foot	8	10	18	......	......	......
Hand	2	1	3	......	......	......
Heel	1	1	2	......	......	......
Jaw	1	......	1	......	......	......
Knee	23	1	24	4	......	4
Leg	1	......	1	......	......	......
Neck	......	1	1	......	......	......
Sacro-iliac	......	1	1	......	......	......
Sacrum	......	1	1	......	......	......
Shoulder	9	......	9	2	......	2
Toe	6	......	6	......	......	......
Wrist	20	8	28	1	......	1
(*c*) Fractures—						
Arm	3	......	3	2	......	2
Clavicle	3	......	3	2	......	2
Finger	3	1	4	......	......	......
Hand	1	......	1	......	......	......
Jaw	1	......	1	......	......	......
Leg	3	......	3	5	1	6
Nose	8	......	8	3	......	3
Rib	2	......	2	1	......	1
Scaphoid	1	......	1	......	......	......
Toe	1	......	1	......	......	......
Tooth	1	......	1	1	......	1
Wrist	4	......	4	......	......	......
186. Other external violence—						
I. Organs and special structures—						
Strain of muscle of—						
Abdomen	9	......	9	......	......	......
Ankle	9	2	11	......	1	1

INFIRMARY REPORT, 1916-17—(*Continued*)

MEN AND WOMEN

	Dispensary Patients			House Patients		
Diseases	Men	Women	Total	Men	Women	Total
Arch	26	11	37	......	......	......
Arm	7	......	7	......	......	......
Back	30	4	34	......	......	......
Chest	43	1	44	......	......	......
Clavicle	1	......	1	......	......	......
Dorsal spine	......	1	1	......	......	......
Face	1	......	1	......	......	......
Finger	1	......	1	......	......	......
Foot	17	18	35	......	......	......
Hand	1	1	2	......	......	......
Heel	1	1	2	......	......	......
Knee	13	2	15	......	......	......
Leg	8	1	9	......	......	......
Neck	10	1	11	......	......	......
Sacro-iliac	20	20	40	......	1	1
Sacro-iliac separation	......	......	......	2	......	2
Sacro-lumbar	2	5	7	......	......	....
Shoulder	13	2	15	......	......	......
Tendon, achilles	7	2	9	1	......	1
Thigh	10	1	11	......	......	......
Toe	2	......	2	......	......	......
Wrist	1	......	1	......	......	......
Concussion of brain	1	......	1	1	......	1
II. Regions—						
Contusion and abrasion of—						
Abdomen	6	......	6	1	......	1
Ankle	11	2	13	......	......	......
Arch	1	......	1	......	......	......
Arm	20	2	22	......	......	......
Back	6	1	7	1	......	1
Buttock	1	......	1	......	......	......
Chest	18	1	19	......	......	......
Coccyx	......	......	......	......	1	1
Ear	4	......	4	......	......	......
Elbow	44	7	51	......	......	......
Eye	11	1	12	......	......	......
Eyelid	4	......	4	......	......	......
Face	43	10	53	......	......	......
Finger	76	19	95	......	......	......
Foot	77	17	94	2	......	2
Hand	49	18	67	1	......	1
Head	12	3	15	......	......	......
Heel	31	51	82	......	......	......
Hip	6	2	8	......	......	......
Knee	74	11	85	......	......	......
Leg	33	4	37	......	......	......
Mouth	2	1	3	......	......	......
Nail	3	3	6	......	......	......
Neck	5	1	6	......	......	......

INFIRMARY REPORT, 1916–17—(*Concluded*)

MEN AND WOMEN

	Dispensary Patients			House Patients		
Diseases	Men	Women	Total	Men	Women	Total
Nose	16	4	20	1	......	1
Penis	1	......	1	......	......	......
Rib	9	......	9	......	......	......
Scrotum	1	......	1	......	......	......
Shoulder	20	1	21	......	......	......
Spine	......	2	2	......	......	......
Tendon, achilles	....	1	1	......	......	......
Testicle	1	......	1	......	......	......
Thigh	11	......	11	2	......	2
Toe	55	12	67	1	......	1
Wrist	4	2	6	......	......	......
Multiple	2	......	2	......	......	......
Miscellaneous	18	2	20	......	......	......
Foreign body—						
Ear	2	2	4	......	......	......
Elbow	1	......	1	......	......	......
Finger	12	8	20	......	......	......
Foot	3	......	3	......	......	......
Hand	4	2	6	......	......	......
Heel	1	......	1	......	......	......
Leg	1	......	1	......	......	......
Nose	1	......	1	--	......	......
Throat	2	......	2	......	......	......
Toe	1	1	2	......	......	......
Miscellaneous	2	......	2	......	......	......
XIV. Ill-defined Diseases:						
189. Unclassified or ill-defined—						
(*a*) Diseases not specified—						
Car sickness	......	1	1	......	......	......
Dentition	1	......	1	......	......	......
Fatigue	1	......	1	......	......	......
Headache	44	62	106	......	4	4
Insomnia	8	12	20	1	......	1
Unknown	......	1	1	......	3	3
(*b*) No diseases; feigned disease—						
Hygiene advice	......	1	1	......	......	......
No disease	98	57	155	3	10	13
No diagnosis	2	26	28	2	8	10
Normal	7	......	7	......	......	......

STATISTICAL ADDENDA

COMPILED BY THE RECORDER OF THE FACULTIES

TABLE 1.—Summaries of officers of instruction in the colleges at Berkeley, 1898–1917.

	Professors								
Year	Acting Profs.	Emer. Profs.	Assoc. Profs.	Asst. Profs.	Lectrs.	Instrs.	Dept. Assts.*	Teaching Fellows	Total
1898–99	30	1	14	19	1	40	36	0	141
1899–1900	29	2	15	20	2	40	40	5	153
1900–01	31	2	14	19	2	41	45	2	156
1901–02	29	1	13	22	5	56	43	0	169
1902–03	34	1	12	26	14	64	48	4	203
1903–04	36	2	14	42	14	51	60	3	222
1904–05	39	1	16	48	16	45	86	3	254
1905–06	37	3	18	51	14	55	82	3	263
1906–07	40	3	19	57	14	46	94	3	276
1907–08	44	3	22	59	12	47	104	4	295
1908–09	50	3	28	62	14	53	100	6	316
1909–10	55	8	23	70	14	52	118	7	347
1910–11	47	10	29	64	14	57	75	7	303
1911–12	48	9	42	57	18	81	110	9	374
1912–13	55	8	38	61	17	77	121	16	393
1913–14	72	6	33	82	16	87	114	14	424
1914–15	73	10	43	95	20	83	169	16	509
1915–16	68	10	50	78	20	83	168	26	503
1916–17	71	10	47	83	25	83	178	24	521

* Including readers.

TABLE 2.—Officers of instruction in the colleges and departments away from Berkeley.

				Medicine					
Year	L. O.	Art	Law	S. F.	L. A.	P. G. Medicine	Dentistry	Pharm.	Univ. Farm
1898–99	11	6	5	68	....	58	43	7	....
1899–1900	11	8	5	70	....	82	45	10	....
1900–01	12	8	5	68	....	94	45	9	....
1901–02	11	8	5	81	....	101	50	11	....
1902–03	12	9	5	50	....	109	46	10	....
1903–04	13	10	6	62	....	28	24	9	....
1904–05	13	9	6	55	....	23	25	8	....
1905–06	9	9	6	66	....	....	22	8	....
1906–07	7	....	6	52	....	....	34	9	....
1907–08	7	11	6	54	....	....	34	8	....
1908–09	8	7	6	54	....	....	31	8	....
1909–10	7	7	6	58	59	....	26	8	....
1910–11	16	9	6	55	61	....	32	8	10
1911–12	16	10	6	55	61	....	31	7	14
1912–13	17	12	6	53	58	....	24	9	....
1913–14	12	8	8	70	58	....	25	9	12
1914–15	14	8	8	80	145	....	25	8	23
1915–16	12	8	6	98	not reported	....	29	10	24
1916–17	14	13	8	142	121	....	37	7	29

TABLE 3.—Students in the several colleges, 1907–1917.

NOTE.—The upper figures on the left of each group refer to men, the lower to women: the figures on the right side are the totals. The following table does not include students in the following courses of instruction: University Extension, California School of Fine Arts, The University Farm School, Short Courses in Agriculture, Correspondence Courses, Farmers' Institutes, Wilmerding School of Industrial Arts.

In Berkeley:	College or School	1907–08	1908–09	1909–10	1910–1911	1911–12	1912–13	1913–14	1914–15	1915–16	1916–17
Graduate Students:	....	151 173 324	186 217 403	214 211 425	258 243 501	311 267 578	344 304 648	404 303 707	459 373 832	535 477 1012	532 560 1092
Undergraduates:	Letters	39 93 132	39 98 137	35 116 151	59 113 172	64 104 168	69 107 176	71 105 176	79 114 193	*	
	Social Sciences	311 790 1101	321 732 1053	341 768 1109	365 786 1151	342 796 1138	395 911 1306	462 1035 1497	575 1296 1871	1455 2232 3687	1586 2364 3950
	Natural Sciences ..	124 96 220	177 104 281	230 170 400	349 260 609	454 408 862	566 511 1077	727 595 1322	746 591 1337		
	Commerce	177 0 177	186 4 190	222 2 224	258 5 263	263 5 268	282 5 287	282 14 296	298 13 311	310 30 340	363 27 390
	Agriculture...........	128 4 132	145 7 152	191 6 197	270 10 280	350 22 372	429 26 455	524 28 552	532 21 553	537 28 565	532 14 546
	Mechanics	260 0 260	293 0 293	301 0 301	294 0 294	316 0 316	318 0 318	366 0 366	361 0 361	345 0 345	328 0 328
	Mining	278 0 278	261 0 261	243 0 243	209 0 209	160 0 160	132 0 132	122 0 122	102 0 102	93 0 93	126 0 126
	Civil Engineering.	250 0 250	246 0 246	232 0 232	236 0 236	234 0 234	224 0 224	261 0 261	234 0 234	196 0 196	168 0 168
	Chemistry	34 5 39	47 3 50	44 2 46	55 2 57	56 0 56	60 0 60	62 3 65	69 5 74	102 4 106	131 6 137
	At Large†	6 8 14	14 22 36	14 21 35	[38]† [30 68]	[29]† [36 65]	[23]† [37 60]	[44]† [46 90]	3 7 10	....	....
	Medicine .... (1st and 2nd years)	6 1 7	....	10 5 15	27 3 30	27 1 28	52 7 59	39 7 46	42 7 49	31 5 36	39 1 40
	Jurisprudence	....	....	....	....	....	....	....	....	67 2 69	83 6 89
	Total Undergraduates	1613 997 2610	1729 970 2699	1863 1090 2953	2122 1179 3301	2266 1336 3602	2527 1567 4094	2916 1787 4703	3041 2054 5095	3001 2285 5286	3356 2418 5774
Total in the Colleges at Berkeley (deducting for duplicates)		1760 1156 2916	1907 1176 3083	2067 1285 3352	2343 1403 3746	2539 1573 4112	2821 1846 4667	3285 2064 5349	3454 2394 5848	3491 2706 6197	3751 2944 6695
Percentage of men, departments at Berkeley		60.36	61.85	61.66	62.55	61.74	60.44	61.41	59.06	56.28	56.02

* Beginning 1915-16, the colleges of Letters, Social Sciences, and Natural Sciences were merged into a single college of Letters and Science.

colleges.

	1907–08	1908–09	1909–10	1910–11	1911–12	1912–13	1913–14	1914–15	1915–16	1916–17
Lick Observatory, Mt. Hamilton:	3 0 3	3 0 3	1 1 2	1 1 2	2 0 2	0 0 0	0 0 0	2 0 2	2 0 2	4 0 4
In San Francisco:										
Hastings College of the Law	69 0 69	98 2 100	116 1 117	104 1 105	117 2 119	100 0 100	88 0 88	71 2 73	76 0 76	91 8 99
*Medical School (3rd and 4th years)	25 1 26	28 7 35	39 10 49	18 0 18	16 2 18	17 3 20	24 7 31	37 6 43	49 9 58	43 10 53
College of Dentistry	69 0 69	53 0 53	57 0 57	64 0 64	77 1 78	90 0 90	93 0 93	109 2 111	138 1 139	170 5 175
California College of Pharmacy	42 3 45	62 5 67	67 5 72	78 7 85	79 1 80	95 3 98	113 4 117	91 4 95	91 5 96	89 3 92
Total in the Colleges in San Francisco	205 4 209	241 14 255	279 16 295	264 8 272	289 6 295	302 6 308	318 11 329	310 14 324	354 15 369	393 26 419
In Los Angeles:	....	....	37 7 44	28 6 34	18 1 19	7 0 7	3 0 3	....	27 1 28	46 2 48
Total in the University (deducting for duplicates)	1965 1160 3125	2127 1184 3311	2352 1301 3653	2631 1417 4048	2842 1579 4421	3128 1852 4980	3606 2074 5680	3764 2408 6172	3874 2722 6596	4190 2972 7162
Summer Session, 1916	258 264 522	317 344 661	381 438 819	460 591 1051	562 1419 1981	676 1599 2275	783 1580 2363	982 2197 3179	1488 3876 5364	1190 2785 3975
Total	2223 1424 3647	2444 1528 3972	2733 1739 4472	3091 2008 5099	3404 2998 6402	3804 3451 7255	4389 3654 8043	4746 4605 9351	5362 6598 11,960	5380 5757 11,137
Deduct for duplicate registrations in Summer Session and in Fall session following	154	109	189	245	293	220 183 403	299 218 517	324 289 613	431 355 786	423 391 814
Grand Total	3493	3863	4283	4854	6109	3584 3268 6852	4090 3436 7526	4422 4316 8738	4931 6243 11,174	4957 5366 10,323

*Up to and including 1905-06 figures for Medical School include four classes; beginning 1906-07 only third and fourth years are given figures for first and second years being included in "Students in Berkeley," graduate and undergraduate.

TABLE 4.—Showing proportion (per cent) of the undergraduates, including special students, in each of the colleges at Berkeley.

	1903-04	1904-05	1905-06	1906-07	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Letters	9.54	8.70	7.70	5.70	5.05	5.07	5.11	5.21	4.66	4.30	3.74	3.80	† 67.82	68.57
Social Sciences	40.24	41.06	41.84	41.87	42.14	39.01	37.52	34.86	31.60	31.90	31.83	36.72		
Natural Sciences	7.89	7.65	7.58	8.82	8.42	10.41	13.54	18.45	23.93	26.31	28.11	26.24		
Commerce	4.89	5.06	5.71	6.14	6.78	7.03	7.50	7.96	7.44	7.01	6.30	6.11	6.25	6.77
Agriculture	4.19	4.29	4.88	5.07	5.05	5.63	6.67	8.48	10.33	11.11	11.74	10.85	10.39	9.47
Mechanics	9.99	10.77	10.59	10.53	9.96	10.85	10.19	8.96	8.82	7.77	7.78	7.09	6.35	5.69
Mining	12.04	11.54	10.75	10.93	10.65	9.67	8.22	6.33	4.44	3.22	2.59	2.00	1.71	2.18
Civil Engineering	6.82	8.38	8.37	8.74	9.58	9.11	7.11	7.14	6.49	5.47	5.55	4.59	3.60	2.91
Chemistry	4.40	2.51	2.14	1.67	1.49	1.85	1.55	1.72	1.55	1.46	1.38	1.45	1.95	2.37
Medicine	....	....	....	.30	.26	.55	.50	.09	.08	1.44	.98	.96	.66	.69
At large	....	....	....	....	.53	1.33	1.18	*[2.06]	*[1.80]	*[1.46]	*[1.91]	.19	....	....
Jurisprudence	....	....	....	....	....	....	....	....	....	....	....	....	1.27	1.35

* In the above table, 1910–11 to 1913–14 inclusive, students at large are summarized separately, and are also distributed among the several colleges according to expressed collegiate preference.

† Beginning 1915–16, the colleges of Letters, Social Sciences, and Natural Sciences were merged into a single college of Letters and Science.

TABLE 5.—Summary of students registered to November 1 (approximately), 1908–17.

A. The colleges at Berkeley:	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917
(1) Graduate students in the colleges of letters and sciences (including engineering)	328	337	416	460	533	577	661	782	902	705
(2) Undergraduate students in the colleges of letters and sciences (including engineering)	2538	2745	3033	3308	3753	4325	4629	4832	5140	4621
Total	2866	3082	3449	3768	4286	4902	5290	5614	6042	5326
B. The colleges in San Francisco:										
(1) Law	95	112	102	116	97	79	72	71	93	33
(2) Medicine (3rd and 4th years only)*	8	11	16	18	19	31	45	58	60	43
(3) Dentistry	56	57	59	75	89	90	112	141	177	172
(4) Pharmacy	69	78	85	78	87	114	95	93	95	86
Total	228	258	262	287	292	314	324	363	425	334

---

* Students in medicine, 1st and 2nd years, included in colleges at Berkeley:										
Graduate	8	13	10	16	24	42	28	27	39	42
Undergraduate	10	20	21	35	58	46	55	31	30	61
Total	18	33	31	51	82	88	83	58	69	103

TABLE 6A.—Graduate students at Berkeley, classified by colleges, September 1, 1917, with comparable figures for 1915 and 1916.

NOTE.—In the columns showing the number of students, the upper left-hand figures refer to men, the lower to women; the figures on the right side are totals.

	1915		1916		1917	
Letters and Science	228		265		179	
	330	558	422	687	391	572
Commerce	3		5		4	
	2	5	0	5	2	6
Agriculture	50		39		18	
	5	55	7	46	0	18
Mechanics	5		8		3	
	0	5	0	8	0	3
Mining	2		2		3	
	0	2	0	2	0	3
Civil Engineering	6		2		2	
	0	6	0	2	0	2
Chemistry	25		28		17	
	1	26	5	33	1	18
Medicine (1st and 2nd years)	22		26		39	
	5	27	4	30	3	42
Jurisprudence	80		76		35	
	6	86	6	82	6	41
Architecture	8		5		2	
	0	8	2	7	0	2
Total	429		456		302	
	349	778	446	902	403	705

mately), 1916 and 1917.

NOTE.—In the columns showing number of students the upper left-hand figures refer to men, the lower to women; the figures on the right side are totals.

	Senior or 4th year				Junior or 3d year				Sophomore or 2d yr.				Freshman or 1st yr.				Special				Totals			
Colleges	1916		1917		1916		1917		1916		1917		1916		1917		1916		1917		1916		1917	
Letters and Science	326 388	714	209 458	667	311 470	781	224 493	717	337 569	906	281 619	900	358 716	1074	295 765	1060	30 71	101	22 71	93	1362 2214	3576	1031 2406	3437
Commerce	63 1	64	27 3	30	55 6	61	58 11	69	102 8	110	68 13	81	87 8	95	76 25	101	11 1	12	7 1	8	318 24	342	236 53	289
Agriculture	134 2	136	69 1	70	106 3	109	68 4	72	121 5	126	68 4	72	113 3	116	98 9	107	10 1	11	9 1	10	484 14	498	312 19	331
Mechanics	71 0	71	27 0	27	51 0	51	37 0	37	77 0	77	56 0	56	90 0	90	91 0	91	13 0	13	2 0	2	302 0	302	213 0	213
Mining	28 0	28	17 0	17	20 0	20	17 0	17	29 0	29	27 0	27	31 0	31	28 0	28	5 0	5	1 0	1	113 0	113	90 0	90
Civil Engineering	50 0	50	19 0	19	43 0	43	19 0	19	21 0	21	32 0	32	44 0	44	34 0	34	5 0	5	1 0	1	163 0	163	105 0	105
Chemistry	19 0	19	28 0	28	27 3	30	27 1	28	36 2	38	32 2	34	38 0	38	33 3	36	4 0	4	5 0	5	124 5	129	125 6	131
Schools																								
Medicine	....	....	....	....	....	....	....	....	6 1	7	9 0	9	32 0	32	51 1	52	....	....	....	....	38 1	39	60 1	61
Jurisprudence	....	....	....	....	....	....	....	....	4 0	4	0 1	1	61 4	65	35 5	40	3 1	4	2 0	2	68 5	73	37 6	43
Totals	691 391	1082	396 462	858	613 482	1095	450 509	959	733 585	1318	573 639	1212	854 731	1585	741 808	1549	81 74	155	49 73	122	2972 2263	5235*	2209 2491	4700*

*Net Total..............5140...........4621

Deduct for duplicates as follows:

1916
Letters and Science and Medicine.........27
0 27
Letters and Science and Jurisprudence 63
4 67
Commerce and Jurisprudence.................1
0 1
— — 91
4 95
2881
2259
Net Total 5140

1917
Letters and Science and Medicine.........37
1 38
Letters and Science and Jurisprudence 34
6 40
Commerce and Jurisprudence 1
0 1
— — 72
7 79
2137
2484
Net Total..4621

TABLE 7.—Degrees conferred, 1908–1917.

DEGREE	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917
LL.D.	0 0 0	1 0 1	9 0 9	0 0 0	5 0 5	5 0 5	4 0 4	4 0 4	2 0 2	2 0
J.D.	6 0 6	7 0 7	7 1 8	8 1 9	10 1 11	11 1 12	15 1 16	18 2 20	22 0 22	27 2
Ph.D.	4 0 4	10 0 10	4 1 5	5 1 6	13 2 15	9 2 11	11 2 13	22 4 26	22 0 22	26 3
M.A.	9 3 12	7 10 17	7 11 18	5 12 17	4 20 24	16 22	12 26 38	43 46 89	48 65 113	35 61
M.L.	9 13 22	9 11 20	7 16 23	5 16 21	9 15 24	6 14 20	13 28 41	... ...	... ...	....
M.S.	2 3 5	12 10 22	20 5 25	27 8 35	26 9 35	43 13 56	41 18 59	20 5 25	31 3 34	12 1
Grad. in Arch.	....	....	....	....	....	....	2 0 2	3 0 3	1 0 1	1 0
Grad. in Publ. H.	....	....	....	....	....	....	0 0 0	4 1 5	0 0 0	1 0
Gr. in Educ.	....	....	....	....	....	....	....	....	....	1 0
E. E.	....	....	....	....	....	....	....	....	....	1 0
Number of higher degrees	30 19 49	46 31 77	54 34 88	50 38 88	67 47 114	80 46 126	98 75 173	114 58 172	128 68 196	106 67 1
A.B.	14 29 43	10 17 27	8 31 39	7 26 33	11 25 36	23 24 47	11 24 35	201 310 511	257 331 588	176 285 4
B.L.	33 128 161	44 111 155	49 108 157	41 113 154	42 114 156	54 122 176	111 171 282	... ...	... ...	....
Nat. Sci.	13 34 47	19 16 35	34 20 54	37 34 71	70 61 131	80 65 145	56 64 120	5 11 16	... ...	....
Commerce	18 0 18	14 0 14	22 1 23	22 1 23	21 0 21	32 0 32	27 0 27	37 3 40	39 1 40	40 1
Agricult're	13 0 13	21 1 22	21 3 24	22 0 22	40 0 40	45 3 48	67 4 71	74 5 79	78 2 80	80
B. S. Mechanics	42 0 42	26 0 26	45 0 45	26 0 26	36 0 36	30 0 30	47 0 47	41 0 41	38 0 38	35 0
Mining	35 0 35	26 0 26	27 0 27	44 0 44	26 0 26	25 0 25	25 0 25	15 0 15	13 0 13	13 0
Civil Eng.	20 0 20	34 0 34	27 0 27	24 0 24	31 0 31	31 0 31	30 0 30	33 0 33	32 0 32	34 0
Chemistry	6 2 8	3 1 4	5 1 6	9 0 9	7 0 7	11 0 11	7 0 7	13 1 14	4 1 5	10 0
Number of bachelor's degrees	194 193 387	197 146 343	238 164 402	232 174 406	284 200 484	331 214 545	381 263 644	419 330 749	461 335 796	397 286 6
LL.B.	14 0 14	14 0 14	23 0 23	19 0 19	28 1 29	22 0 22	30 0 30	18 0 18	8 0 8	16 0
M.D.	15 1 16	6 1 7	7 4 11	5 1 6	10 1 11	11 1 12	11 3 14	12 1 13	25 4 29	22 4
D.D.S.	20 0 20	15 0 15	16 0 16	10 0 10	15 0 15	20 0 20	23 0 23	19 0 19	29 0 29	38 1
*Ph.G.	10 1 11	18 1 19	27 2 29	30 2 32	31 0 31	28 2 30	41 2 43	36 1 37	27 2 29	31 1
Pharm.B.	1 0 1	0 0 0	1 0 1	3 1 4	2 0 2	0 0 0	1 0 1	1 0 1	2 0 2	0 0
Ph. C.	....	....	....	....	....	....	....	....	....	2 0
Number professional degrees	60 2 62	53 2 55	74 6 80	67 4 71	86 2 88	81 3 84	106 5 111	86 2 88	91 6 97	109 6

* Ph.G. discontinued and replaced by Ph.C. between 1905 and 1911 inclusive. Beginni
1915, Ph.C. was given for completion of four-year course.

† Figures for 1917 cannot be completed before December 21, 1917.

TABLE 8.—Number of accredited schools each year since 1887.

	1887-88	1888-89	1889-90	1890-91	1891-92	1892-93	1893-94	1894-95	1895-96	1896-97
Number public high schools accredited	6	7	11	17	24	30	39	43	52	61
Number private secondary schools accredited	1	2	2	6	7	10	9	14	15	15
Total number schools accredited	7	9	13	23	31	40	48	57	67	76

	1897-98	1898-99	1899-1900	1900-01	1901-02	1902-03	1903-04	1904-05	1905-06	1906-07
Number public high schools accredited	66	76	87	93	93	100	104	99	106	114
Number private secondary schools accredited	16	15	23	23	22	18	20	21	23	23
Total number schools accredited	82	91	110	116	115	118	124	120	129	137

	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Number public high schools accredited	122	140	147	155	172	181	192	189	191	248
Number private secondary schools accredited	25	30	31	31	31	32	34	36	36	53
Total number schools accredited	147	170	178	186	203	213	226	225	227	301

NOTE.—Schools authorized to recommend though not regularly accredited: 1909–10, 34; 1910–11, 26; 1911–12, 35; 1912–13, 40; 1913–14, 45; 1914–15, 53; 1915–16, 49.

The summary for 1916–17 includes 49 public and 27 private schools in Division B of the accredited list; the continued accrediting of schools in Division B is rendered uncertain by undeveloped organization, inadequate resources, or other causes.

TABLE 9.—Enrollment of graduate students.

	1906-07	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Total number of graduate students	281	324	403	425	501	578	648	707	832	1014	1092
Number from University of California	159	177	236	214	258	307	342	371	424	431	563
Percentage of graduate students from University of California	56.4	54.6	58.5	50.3	51.4	53.1	52.8	52.3	51.0	53.7	55.5
Percentage of graduate students from other institutions	43.6	45.4	41.4	49.6	48.5	46.9	47.2	47.7	49.0	46.3	44.5
Total number of colleges and universities represented	67	81	90	98	120	122	152	146	168	207	175
*Number of graduate students taking higher degrees (masters' and doctors' degrees not including juris doctor)	34	49	61	66	79	99	103	149	149	172	168
Percentage of graduate students taking higher degrees (masters' and doctors' degrees not including juris doctor)	12.1	15.1	15.1	15.5	15.7	17.1	15.9	21.1	17.9	16.9	15.4
Number of graduate students receiving Ph.D.	5	4	10	5	6	15	10	14	22	22	33
Number of graduate students receiving the bachelor's degree	8	3	7	8	7	7	10	7	3	6	3
Number of graduate students taking juris doctor in the academic departments	3	6	7	6	8	13	11	16	20	22	30

* In 1914–15, 1915–16, and 1916–17 includes Degrees of Graduate in Architecture, Graduate in Education, Graduate in Public Health, and Electrical Engineer.

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- The Prospectus of the College of Agriculture.

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1917-1918

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3. Announcement of the School of Education. July.
4. Rules and Regulations, University Farm School. September.
5. Catalogue of Officers and Students. September.
6. Rules of the Editorial Committee. October.
7. Announcement of the Department of Home Economics. November.
8. Annual Register. November.
9. Annual Report of the President of the University. December.
10. Suggestions on the Preparation of Manuscript. January.
11. Catalogue of Officers and Students. February.
12. Announcement of Summer School of Surveying. February.
13. Special Announcement of the Department of Physical Education. February.
14. Announcement of Summer Session, 1918, Southern Division. March.
15. Announcement of Summer Session, 1918, Northern Division. April.
16. Announcement of the Department of Greek. April.
17. The Junior College Bulletin. May.

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Annual Report of the President of the University on Behalf of the Regents to His Excellency the Governor of the State of California

1917-1918

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REPORT OF THE PRESIDENT OF THE UNIVERSITY

University of California,
Berkeley, December 21, 1918.

To His Excellency William Dennison Stephens,
Governor of the State of California.

Sir: I have the honor to submit herewith my annual report on the condition of the University. The present attendance of students on classes in the University, in round numbers, is fifty-eight hundred, of whom about fifty-two hundred are undergraduates and the remaining six hundred graduate students. During the academic year 1917–18 a marked decrease in enrollment was noted, the number of withdrawals of members of the male undergraduate and graduate student bodies steadily increasing month by month, until in May, 1918, there was a total enrollment of approximately forty-six hundred students. Nearly one thousand of the men students enlisted in various branches of the service or answered the Government's call under the Selective Service regulations. During the year following the declaration of war by the United States one out of each three men registered in the University had volunteered his services. After the close of the University year in May, 1918, a much larger proportion offered themselves, almost the entire number of men in the graduating class enlisting immediately. It is gratifying to note that before the signing of the armistice more than thirty-five hundred sons of the University had cast their lot with the colors, according to figures compiled in the Military Bureau, a branch of the Alumni Association of the University. It is probable that several hundred alumni and former students who have joined the military forces of the United States have not been listed because of the lack of data concerning such enlistments. To date more than eighty have given their lives to the cause for which this nation entered the war.

One Out of Each Three Volunteers

The downward trend of the registration was completely reversed, however, when, in July, 1918, the War Department, through its Committee on Education and Special Training, announced its plan for the formation of units of the Students' Army Training Corps at universities and colleges throughout the nation. Interest among graduates of the high schools of the state, eligible for University enrollment, proved to be keen, and an unexpectedly large number of applications for admission was filed. Before the plan could be instituted and previous to the formation of the unit at the University, Congress extended the ages of those liable for military service to include boys from eighteen to twenty-one years of age. Simultaneously it was announced that the Students' Army Training Corps plans would not be abandoned, but that men qualified to attend universities and colleges could, upon their own election and after enrollment in the university of their choice, apply for induction into the Army or Navy through their local draft boards, with the understanding that they then should be assigned to military or naval units of the Students' Army Training Corps located at their own universities. The change in statuts of the enlisted members of the Students' Army Training Corps increased the interest of men of college age and qualifications and it was thought for a time that the male undergraduate enrollment in the University would far exceed any figure theretofore reached. By adhering strictly to its regularly maintained high standards of admission, however, the number admitted was considerably restricted and the total of nineteen hundred finally enrolled in the Students' Army Training Corps and its naval unit, with the addition of the non-military contingent (composed mainly of men ineligible to enlist by reason of age, physical disqualification or alien citizenship), formed a grand total of about twenty-eight hundred men students.

Students' Army Training Corps Plan Announced

Enrollment Prospects Brighten

Total of 1900 Men Students In Uniform

The total number of different men receiving military instruction at the University since the opening of the academic year 1917–18 included, in round numbers: (1) three thousand graduated from the School of Military Aeronautics; (2) two hundred graduated from the School of Vocational Training (National Army Training Detachment); (3) one hundred enrolled in the Signal Corps School for Radio Electricians; (4) twelve hundred in the Reserve Officers' Training Corps (suspended in August, 1918); (5) fourteen hundred in the Students' Army Training Corps and five hundred in the Naval Unit of the Students' Army Training Corps (in existence during the fall of 1918 only). Deducting in order to allow for students who were members of the Reserve Officers' Training Corps and also of the Students' Army Training Corps (including Naval Unit), it appears that the University gave military instruction during the period of the war to more than fifty-five hundred men.

5500 Given Military Instruction

University enrollment during the last two years has, of course, suffered because of the heavy drain made on the male student body by the call to service. The percentage of male students dropped from 56.02 in 1916–17 to 45.09 in 1917–18, a loss of 11 per cent. In the year 1917–18 the University enrollment reached its lowest mark in May, 1918, at which time, after subtracting leaves of absence and emergency withdrawals, there remained a total of 4658 students classified as follows: Undergraduate students, 3654; graduate students, 618; professional colleges, 386.

More Than 6000 for Year 1917-18

The total enrollment in the colleges at Berkeley, of both men and women, for the latter year was only 6013, as compared with 6695 for the year 1916–17. With the establishment in October, 1918, of the Students' Army Training Corps and the Naval Unit, as integral parts of the University war work plan, undergraduate male enrollment took a marked spurt forward. On November 1, 1918, there were registered in the University 5189 undergraduate students and 558 graduate students, making a total of 5747. As compared with the total of 2209 undergraduate male students registered in the colleges at Berkeley, on November 1, 1917, the figures for the corresponding date in 1918 showed a gain of 397. This more than half offset the loss of 763 experienced in 1917 as compared with 1916, the year preceding our entrance into the war.

Number of Candidates Decreases

The drop in the number of degrees conferred upon men was greatly accelerated by our entrance into the war. The number of higher degrees, exclusive of professional degrees, granted male candidates fell from 127 in 1917 to 76 in 1918. Bachelor's degrees conferred upon men fell from 478 in 1917 to 308 in 1918. The situation is unique in that not only the percentage but the actual increase in number of degrees granted women in the latter year took a greater leap forward than in any of several preceding years.

Fewer Graduate Students

The number of graduate students pursuing courses at Berkeley, steadily increasing in a period of ten years, was also affected by the war. Only 907 graduate students registered in the year 1917–18 as compared with 1092 in 1916–17. A corresponding decrease was noted in the various professional colleges of the University located in San Francisco. The general ''slump'' in enrollment marked generally in the University departments was not, however, found in the College of Medicine, where particular training for real service of a national interest drew a greater number of students than ever before.

The general trend of university development during the war period was one of rapid adjustment to existing conditions. It is expected that a return to a peace basis will be equally swift and compelling, and that the University's large student body will soon reach its normal rate of increase.

Beginning on page 302 of this report will be found a complete financial report of the University for the academic year 1917-18.

Comptroller's Financial Report

According to the balance sheet submitted by the Comptroller, the University possesses assets in the amount of $20,725,193.94. The principal item, of course, is the surplus invested in ''fixed assets,'' amounting to $14,321,287.92, representing the book value of the lands, buildings and equipment of the University. An increase of $394,215.81 over the amount shown in the report for the year ending June 30, 1917, is to be noted in the amount held as ''investments.''

The income of the University of California is received from the following sources: The United States Government, the State

Income and Expenditures

of California, gifts, endowments, receipts from sales of material and for services rendered, and fees of students. This latter item covers only the expenses for laboratory material, supplies, etc., of individual students and does not offset, in any way, the cost of education, research or administration in the University. The income from the sources noted above is as follows: United States Government, $119,433.21; State of California, $2,225,419.33; students' fees, $280,215.47; sales of materials and services rendered, $466,987.69; endowments, $226,316.37; gifts, $240,460.52.

The income from investments for the year 1917–18 was slightly larger than for the year 1916–17, due primarily to a complete investment of the funds of the University, the interest rate remaining practically the same.

Endowment Funds Increase

The endowment funds of the University increased to $5,490,430.85 during the year. The most notable additions were the Isaias W. Hellman Scholarship Fund and the Herbert Kraft Scholarship Fund of $50,000 each, and the Horace Davis Library Fund of $10,000. The net increase for the year was reduced to $34,015.53, due to the fact that the Doe Library Fund which formerly appeared under endowments was expended on the completion of the University Library and now appears among the assets of the University. Gifts were received during the year for current use amounting to $75,284.75.

Expenditures for education and research total $2,195,432.83, an increase of $196,936.26 over the year 1916–17. Disbursements for scholarships, prizes and loans amounted during the year to $39,120.89, an insufficient amount to meet the needs of the student body.

War Service Record Attached as Supplement

The part that the University has played in the war is well evidenced by the War Service Record of the University, a copy of which, in supplement form, is attached hereto. The University has devoted itself without stint to Liberty Loan sales and purchases, Red Cross subscriptions, and war work campaigns. The faculty and students have been ready and eager to participate. A glance through the supplement to this report will convincingly testify to the whole hearted response of the University to the spirit of the times and the task of the nation.

113 Faculty Members Answer Call To Arms

The University's contribution to the Government in men from its teaching staff has been both notable and great in number. A total of 113 responded to the call for experts in one field or another closely related to the mighty machinery of war. A detailed list of members of the faculty in war service will be found on page 5 of the supplement to this report, following which will be found statements describing in particular the various fields of war endeavor in which the University's faculty members have been laboring. Of especial interest perhaps are the following examples of this form of the University's response to the call of the nation:

Many Experts Commissioned

A. H. Allen, former Manager of the University Press, Major, Quartermaster's Corps, has served as Acting Supply Officer of the Students' Army Training Corps at the University, and as Commanding Officer of the School of Vocational Training, National Army Training Detachment, also located at the University; Dinsmore Alter, Instructor in Astronomy, has been commissioned Major in the Coast Artillery Corps; Dr. David P. Barrows, Professor of Political Science and former Dean of the Faculties, holds the rank of Lieutenant-Colonel in the Army and has been stationed in the Philippines and in Siberia; Miss Maude Cleveland, Director of the Women's Gymnasium and Assistant Professor of Physical Education for Women, since the early days of the war has been with the Red Cross in France; Dr. C. L. Cory, Professor of Mechanics and Dean of the College of Mechanical and Electrical Engineering, has served as consulting power engineer for the huge government explosives plant located at Nitro, Virginia; Dr. R. T. Crawford, Associate Professor of Practical Astronomy, has been commissioned in the Army Balloon Service and Stationed at Fort Omaha, Nebraska, holding the rank of Major; Stuart Daggett, Professor of Railway Economics on the Flood Foundation, has been for six months in Washington as Assistant to the Chief of the Division of Planning and Statistics of the War Industries Board; A. J. Eddy, Assistant Professor of Civil Engineering, holds the rank of Major in the Coast Artillery; G. R. Fowler, Teaching

Fellow in Political Science, holds the rank of Major of Infantry; Dr. Frederick P. Gay, Professor of Pathology and Major in the Medical Corps, was first in charge of the Red Cross laboratory car "Metchnikoff," used in stifling epidemics in the army camps in this country, and has of late been engaged in highly important laboratory work; Dr. C. M. Haring, Professor of Veterinary Science, has been serving as Major in the Veterinary Corps; Dr. Henry Rand Hatfield, Professor of Accounting on the Flood Foundation and Dean of the College of Commerce, has been in charge of the Division of Planning and Statistics of the War Industries Board in Washington, D. C.; Dr. W. B. Herms, Associate Professor of Parasitology, holds the rank of Major in the Sanitary Corps and has been concerned with epidemiological work in the army camps; Dr. Joel H. Hildebrand, Associate Professor of Chemistry, is Lieutenant-Colonel in the Ordnance Corps; Dr. John Galen Howard, Professor of Architecture and Director of the School of Architecture, is serving with the American Red Cross in France; Dr. L. P. Howe, Instructor in Surgery, has been named Major in the Medical Corps, and has served as Chief of the Surgical Service at the Base Hospital at Camp Fremont; Lincoln Hutchinson, Professor of Commerce on the Flood Foundation, has been aiding the War Industries Board in England, France, and Washington, D. C., during the course of the war; Dr. Charles Gilman Hyde, Professor of Sanitary Engineering, holds the rank of Major in the Sanitary Corps and has been stationed at Camp Meade, Maryland; Dr. E. S. Kilgore, Assistant Clinical Professor of Medicine, holding the rank of Lieutenant-Colonel in the Medical Corps, has been in charge of Base Hospital Unit No. 30, recruited almost entirely from the staff of the Medical School of the University, with the American Expeditionary Forces in France; Dr. Charles A. Kofoid, Professor of Zoology and Assistant Director of the Scripps Institution, with the rank of Major in the Sanitary Corps, has conducted much of the important work in combating the hookworm and other diseases in American Army camps in this country; Dr. A. C. Lawson, Professor of Miner-

Serve in France and Washington

Base Hospital Unit Organized by University

alogy and Geology, and Dean of the College of Mining, is with the American Red Cross in France; Dr. A. O. Leuschner, Professor of Astronomy and Director of the Students' Observatory, has been named Major in the Chemical Warfare Service; Dr. G. N. Lewis, Professor of Physical Chemistry and Dean of the College of Chemistry, has served as Lieutenant-Colonel in the Chemical Warfare Service, having been placed in charge of the gas defense of the American Expeditionary Forces; Dr. William P. Lucas, Professor of Pediatrics, has been in charge of the Children's Relief Work of the American Red Cross in France; David T. Mason, Professor of Forestry, Major in the Forestry Service, has spent more than a year with the American Expeditionary Forces in France; Dr. Elwood Mead, Professor of Rural Institutions, has made numerous trips to Washington in connection with his work as Consulting Engineer for the United States Reclamation Service; Dr. John C. Merriam, Professor of Palaeontology and Historical Geology, has served first as assistant director and later as director of the National Research Council, which, through its connection with the National Council of Defense, has proved to be the most important wartime scientific body in America; Ralph P. Merritt, Comptroller and Secretary of the Board of Regents, has occupied the post of Federal Food Administrator for California since the beginning of the war; Dr. Herbert C. Moffitt, Professor of Medicine and Dean of the School of Medicine, holds the rank of Major in the Medical Corps and has been stationed both in Texas and at the Letterman General Hospital in San Francisco; John T. Nance, Professor of Military Science and Tactics, who was a retired army officer of the Ninth Cavalry, re-entered the army and has now been advanced to the rank of Colonel, having rendered important service at a port of embarkation in the United States; Miss Jessica B. Peixotto, Professor of Social Economics, has been in charge of the work of the Children's Bureau of the Department of the Interior in the United States; Dr. Alvin Powell, former Physician for Men and Roentgenologist, holds the rank of Lieutenant-Colonel in the Air Ser-

Many Civilian War Positions Are Filled

Domestic War Problems Solved by Faculty Men

vice; B. F. Raber, Associate Professor of Mechanical Engineering, has acted as President of the Board of Examiners of the School of Military Aeronautics located at the University; Dr. W. A. Sawyer, Clinical Professor of Preventive Medicine and Hygiene, has been commissioned Major in the Sanitary Corps; Dr. L. S. Schmitt, Assistant Clinical Professor of Syphilology and Secretary of the School of Medicine, holds the rank of Major in the Medical Corps and has been on duty with Base Hospital Unit No. 30, American Expeditionary Forces in France; Dr. George M. Stratton, Professor of Psychology, holds the rank of Major in the Air Service and has been in charge of the psychological tests exacted of applicants for that service, the most important of which he himself created; Dr. Alanson Weeks, Assistant Clinical Professor of Surgery, holds the rank of Major in the Medical Corps and is located at Base Hospital No. 30, France; Dr. J. L. Whitney, Assistant Clinical Professor of Medicine, holds the rank of Major in the Medical Corps and is located at Camp Hospital No. 14, France; Dr. B. M. Woods, Assistant Professor of Theoretical Mechanics and Assistant Professor of Mathematics, has been serving as President of the Academic Board of the School of Military Aeronautics, located at the University; A. T. Wright, Associate Professor of Law, is on leave of absence serving the United States Shipping Board at San Francisco.

Dr. Williams To Advise at Peace Table

Dr. E. T. Williams, Agassiz Professor of Oriental Languages and Literature, has been sent to Paris as technical adviser to the American delegation at the peace table. Dr. Williams was called to his professorship in the University from the Department of State, where he was Chief of the Division of Far Eastern Affairs. His intimate knowledge and understanding of conditions in the Orient make his services at the Versailles peace conference of great value.

Frank H. Probert, Professor of Mining and Dean of the College of Mining, has spent the last few months in Washington in consultation with government engineers of the United States Bureau of Mines. The conferences thus held, it is expected,

Dean Probert To Investigate European Mines

will have much to do with determining the Government's general policy in transferring the mines of the nation from a war to a peace basis. Dean Probert has been named one of an American commission of three mining engineers to survey and to report upon mining conditions in the devastated regions of France and the occupied portions of Germany. He leaves in the near future for a stay of three months in Europe.

Dean Hunt In Canada And Europe

A careful study of agriculture and agricultural labor conditions in Canada was made by Dean Thomas Forsyth Hunt of the College of Agriculture during the fall of 1917. Dean Hunt secured information which has proved of great value in meeting the wartime agricultural problems of the state of California. During the fall of 1918 Dean Hunt was called to Washington by the United States Department of Agriculture, later departing for England and France on an agricultural mission. For two months the members of this mission studied the effect of the war on the agricultural industry in the belligerent countries, many suggestions of value for rehabilitation and reconstruction being made by the Americans.

Committee of Deans Aids In War Endeavor

To meet the exigencies of the war situation, and to relieve the President of some of the more exacting of his duties within the University, there was established with the beginning of the fiscal year 1918–19 an Advisory Committee of Deans. This committee, composed of the Dean of the Faculties, Professor Charles Mills Gayley, the Dean of the Graduate Division, Professor William Carey Jones, and the Dean of the College of Letters and Science, Professor H. Morse Stephens, has consulted with the President and in an appreciable measure left him free to carry out larger duties and responsibilities brought about by the war.

''Go-to-College'' Campaign For S. A. T. C.

On May 8, 1918, the Secretary of War announced the intention of providing military instruction in colleges and universities throughout the country to all students over eighteen years of age. The plan had a two-fold purpose. The aim was to develop as a military asset the great body of college men throughout the country and to provide a reservoir from which officer material could be selected, and secondly, to prevent wasteful depletion of the colleges through indiscriminate volunteering. A "go-to-college" campaign was inaugurated in order to advertise this plan, and to induce high school graduates to continue with their education by offering to them definite and immediate military status. Members of these college corps were to be soldiers of the United States Army on inactive status. They were to be allowed considerable freedom in the choice of studies, but a prescribed proportion of their work was to have a direct military value.

War Department Authorizes S. A. T. C.

This branch of the army was created by order of the President under the authority conferred upon him by the Selective Service Act of May 18, 1917. Preliminary outlines of the plan were received from the Committee on Education and Special Training on August 3, 1918. The University of California immediately offered to establish a corps, and authorization for such was received on August 14, 1918. As stated in the Special Regulations governing the establishment of Students' Army Training Corps, the objects were to be the following:

Objects of Plan Set Forth by Committee

(*a*) To qualify, by systematic and standard methods of training, students at higher civil educational institutions for more effective service in the armed forces of the United States, to permit qualified students to complete their education in numbers sufficient to meet the special and technical needs of the service, and to provide a reservoir from which candidates for officers' training camps may be drawn.

* * * * * * * * * * * *

(*c*) To give young men the moral and intellectual advantages of rigorous military discipline, and to develop in them robust health, hardihood and aggressive physical courage, thus enhancing the value of their entire academic training and their appreciation of the opportunities it affords.

(*d*) To attain these results by the immediate enlistment in the Army of the United States of all physically fit male students above the age of eighteen who are not registrants under the Selective Service Regulations, and to give such students military training in units of the Students' Army Training Corps at higher civil educational institutions until such time as they are called to service with the colors.

The plan of the War Department Committee contemplated the simultaneous initiation of these corps all over the United States on October 1. As the University of California had postponed its opening date from the middle of August to September 27, this plan fitted in very well with our calendar. It being now apparent that the primary interests of the University would for the coming year be concerned with the training of men for military service, and there being a number of independent courses already in operation, namely, the School of Military Aeronautics, Vocational Training detachments, Naval Preparation Courses, and still others under consideration, a Military and Naval Administrative Board was appointed to co-ordinate the activities of the various military and naval schools on the campus. The President appointed this board to represent him in matters connected with the administration of such affairs and to establish and maintain harmony between the academic and military authorities. The board co-operates with the Advisory Committee of Deans of the University and makes its recommendations directly to the President. The personnel of the board consists of: Dr. T. M. Putnam, Associate Professor of Mathematics and Dean of the Lower Division, Chairman; James Sutton, Recorder of the Faculties; Dr. Ivan M. Linforth, Associate Professor of Greek; Robert G. Sproul, Assistant Comptroller of the University, and Morse A. Cartwright, Assistant to the President.

Military-Naval Administrative Board Named

In order to acquaint the various institutions at which units of the Students' Army Training Corps were to be established with the details of the plan, and to gain further information as to local and individual difficulties concerned with such a comprehensive scheme, regional meetings were planned throughout the United States by the Committee on Education and Special Training. Meetings were held at the Presidio of San Francisco on August 23 and 24 for representatives of the western states.

Regional Meeting Held at Presidio

About this time an act of Congress was passed lowering the draft age. In order not to appear to be creating a privileged class out of college students it became necessary to change the

Draft Age Lowered; Plan Changes

status of men in the Students' Army Training Corps from inactive to active. This change in plan was announced at the meetings at the Presidio. It compelled an almost entire revision of the preliminary plans, and as the time was very short before the opening of the colleges, a great deal of confusion was inevitable. Students were now to be granted all of the privileges of regular soldiers of the army, including pay and subsistence. Their programmes of study were definitely restricted to conform to the branch of the service for which they were enrolled. An elaborate scheme was set up providing for their call to the colors, either to the fighting lines or to central officers' training camps, at stated intervals and according to age. Technical students were to be allowed to stay for a longer period and both in engineering and medicine there was to be an elimination of all but the essential and fundamental subjects, which, with the continuous plan of study, would result in shortening the professional courses from one to two years.

Temporary Contract for Unit Signed

On September 8, 1918, the University signed a temporary contract with the War Department agreeing to provide housing, subsistence, and instruction for all men inducted into the unit, not to exceed thirty-five hundred, of whom five hundred were to be in the Naval Unit, which, it was understood at that time, would be part of the Students' Army Training Corps. The War Department agreed to pay one dollar per man per day for housing and subsistence and a certain amount, not at that time definitely determined, for instruction. Colleges that charged tuition fees were to be allowed to collect an equal amount, but no definite provisions were made for institutions, such as the University of California, which have no tuition fees. It was understood, however, that such institutions were to be allowed to charge an amount equal to the increased cost of instruction due to the establishment of the unit.

Under the foregoing contract colleges were obliged to provide housing and subsistence as near October 1 as possible. The University of California, therefore, immediately began the consideration of finding adequate housing accommodations for the men expected to report on or about September 30. In view of the fact that the War Department specified certain restrictions as to air space per man and other sanitary regulations, the Administrative Board, after careful consideration, rejected the plan of converting fraternity houses into suitable barracks. In the first place, there were not nearly enough such structures available to house all the men who would apply. This fact, the cost of remodeling the houses and restoring them again when the unit should be disbanded, and the additional fact that the men would be greatly scattered, were the chief contributing factors in causing the decision to erect barracks and a mess hall. Under the contract price of one dollar per man per day the experience of the University in housing and feeding the members of the School of Military Aeronautics and the vocational training detachments made it clear that about thirty cents per day per man could be set aside for the amortization of the cost of the buildings, which would repay the University by July 1, 1919, to which date the War Department was arranging to carry its obligations.

Barracks Site Is Selected

The site selected for the barracks was in the southwest corner of the campus, along Allston way, near the Center street entrance.

On Monday, September 9, a consultation was held with Mr. Arthur Brown, Jr., the architect for the barracks, and a rough building plan was presented to the Regents at the meeting of September 10, 1918. This plan was approved at an estimated cost of from $175,000 to $200,000, depending on the number of barracks to be erected. Mr. E. A. Hugill, Superintendent of Grounds and Buildings, started clearing the site on September 11 and construction commenced on September 13. It was decided at this time that an endeavor should be made to have eight barracks ready by October 1 and a mess hall completed as soon thereafter as possible. The plans, of course, were not completed at this date, and the architect, the Comptroller's Office and the contractors co-operated in drawing them simultaneously with the prosecution of building operations.

Regents Advance $200,000

Despite considerable rainy weather, three barracks were com-

Barracks are Ready on October 1

pleted on October 1 and the remaining five on October 5. The Students' Army Training Corps, however, did not take possession until October 12. The mess hall, which was of more elaborate construction than the barracks, was not completed until October 12, and the equipment, some of which had to be secured from the East, was not fully installed until October 21. On this date the first meal was served. Despite this fact, the kitchen was operated for a week prior to this date for the serving of meals to the barracks which were used for influenza hospitals. The mild weather of California in September and October made the hurried completion of a heating plant unnecessary and the work on this proceeded in a more leisurely fashion, the plant being completed and in operation by November 13. The total cost of the construction was $145,671.92.

Vocational Section of S. A. T. C.

No men enrolled in the vocational section of the Students' Army Training Corps were taken except as provided for in contracts already in operation. One of these provided for a school for the training of radio electricians. The requirements for admission were two years of high school training. Arrangements were made to receive one hundred men on October 15, one hundred on November 15, and one hundred on December 15, with provision for further increase to a maximum of four hundred and fifty if the need for men with this kind of training continued. The first contingent was received, but the signing of the armistice made unnecessary the training of more men.

An offer of the facilities at the Farm School at Davis for the training of truck and tractor mechanics was made and was still under consideration on November 11.

Influenza Epidemic Interferes

Early in October the influenza epidemic started and seriously interfered with the work of the entire University. Over five hundred members of the Students' Army Training Corps, including the Naval Unit, were sick at one time. Four barracks and a fraternity house were converted into hospital wards, necessitating the housing of one company in Harmon Gymnasium and one in tents. The four hundred members of the Naval Unit had not been placed in barracks, and they were allowed to continue in their individual boarding places.

Military and Academic Conflict

While due weight must be given to the interference of the epidemic, yet there has been ample opportunity to judge of the work of the Students' Army Training Corps, and of its merits and defects wholly apart from this unfortunate circumstance. The decision quite generally reached by the faculty, and I think also by the officers, is that the plan is not the success which had been hoped. The two ingredients of military and academic were not mixed in workable proportions. Though it was intended that the academic should be given the majority of time and attention, the military by its greater definiteness and apparent importance naturally went to the front. Special details like guard duty interrupted attendance on lectures. This discouraged the student, who, finding it difficult to ''make up,'' often discontinued class attendance. The officers, accustomed to the more definite task assignments of the military academy, underestimated the loss suffered by a student in absence from a lecture. Life in the barracks naturally set the military in predominance over the academic. Supervised study in a study hall was more adapted to text-book work than to the freer methods of university instruction. The academic student requires, furthermore, on different days much more time for one study than another. He also requires on certain days time for uninterrupted thought on a single subject. The military method would rather incline toward an even distribution of time among the different subjects on different days.

Favor Camp In Summer For R. O. T. C.

Our experience of the S. A. T. C., fragmentary as it is, would therefore seem to suggest a return to the general type of the R. O. T. C. Training in the life of barracks and camp and in the continuous bearing of military duty and the wearing of uniform may best be obtained through summer encampments. Two of these may properly be required for a four years' course, one for six, and another for three weeks. During these encampment periods the student cadet should draw pay.

On account of the demands made upon the University by the School of Military Aeronautics and on account of lack of definite information concerning the needs of the army, it was not until May or June of 1918 that arrangements were made for the work of a National Army Training Detachment at the University in Berkeley. A contract for the training of two detachments of one hundred men each, for eight weeks was entered into, the first detachment to report on July 1. This work was placed under the direction of Professor F. S. Foote, Jr., and was carried on in University laboratories, vacant for the most part on account of the summer recess of the University. Toward the end of August the direction of this training, which was known in the University as the School of Vocational Training, was taken over by Dr. B. M. Woods as Institutional Director. At about this time it was also decided to undertake additional training by instituting a School for Radio Electricians to prepare men for the Signal Corps. The first detachment of this school was to report on October 14.

School of Vocational Training

The plan of organization after the middle of August was as follows: (1) A director appointed by the University to supervise the School of Military Aeronautics, the School of Vocational Training and the Signal Corps School for Radio Electricians; (2) an assistant director for each of these schools. These men bore titles appropriate to the several schools with which they were connected. This arrangement was made because of the similarity of the organizations and of the desire of the University to economize in the matter of office staff, use of instructional facilities, and employment of instructors. Due to the fact that only one contingent for the School of Radio Electricians was received, the organization was perhaps more elaborate than was necessary. Had the school continued, however, the organization would have justified itself and would have proved an economy.

Radio School Established October 14

At the time of opening the School for Radio Electricians competent instructors were scarce. However, the men who were obtained for the work were of high grade and showed interest and resourcefulness in the instruction. The results obtained were creditable, especially when the difficulties incidental to the influenza epidemic are considered.

A full account of the work of the School of Military Aeronautics is given in the supplement to this report. Now that the school is approaching its close it seems well to review briefly some figures which were not available for publication during hostilities. On November 30, 1918, the University had expended approximately $290,000 in the operation of this school; almost 3000 cadets had completed the course and had received graduation certificates. In the preceding July, the staff included approximately 100 instructors and the monthly budget of the school exceeded $25,000. The necessary construction and alteration of temporary buildings have amounted to $90,000. Army officers on duty, including 12 or 15 assigned as instructors, have at times numbered more than 30. The number of cadets in attendance reached a maximum of 1000 in July. From present indications it appears that the school will have completed its work by the middle of February, 1919, and that it will then go out of existence.

Aeronautics Graduates 3000 Flying Cadets

The epidemic of influenza which had been prevalent in the East for some time, and which was not wholly unexpected here, reached the University, beginning with two cases on the 6th of October, 1918. On the 8th there were three undoubted cases, and on the 9th seventeen. From this time on the cases increased in number until on the 18th of October the disease reached its maximum with seventy-four new cases admitted to the hospital. It then began to decline, and early in November it ceased to be a serious factor in medical affairs at the University.

Spanish Influenza Epidemic

While not unexpected, the severity of the outbreak and the numbers involved made it very difficult to cope with the situation at first. The infirmary became inadequate, and a fraternity house near the campus was quickly transformed into a hospital. It took but forty-eight hours to fill the fraternity house, and a barracks was taken over immediately. In succession three barracks were taken, the last being used only for convalescents, as by that time the number of cases began to diminish.

Aid Given By Mercy Organizations

The National Defenders' Club of Berkeley was of genuine aid in caring for convalescents. Aside from the numbers involved, the situation soon was well in hand. Dr. Robert T. Legge, University Physician and Professor of Hygiene, had been commissioned as Captain in the Medical Corps of the army, and was attached to the School of Military Aeronautics as Surgeon. In the earlier stages of the epidemic hospitals and hospital messes were established and the organization necessary to cope with the situation was devised, all under his direction. He contracted the disease himself, however, and it then became necessary to turn to the Western Department of the Army for the military medical authority needed to continue and perfect the hospital organization. As a consequence of this request, Major William H. Brooks, M.C., U. S. A., was detailed to the University. He was placed in charge of health conditions in the University community. To his wise decisions and untiring energy is due, in large part, the success which greeted the efforts of the University in meeting the dangerous situation at that time developing. Before the epidemic had been entirely eradicated Major Brooks was ordered elsewhere, being replaced by Major H. S. Kiersted, M.C., U. S. A., who continued the policies of his predecessor. There were nine contract surgeons on the staff, and they gave freely of their time and ability, and with success.

Early in the epidemic, the Berkeley Chapter of the American Red Cross rendered most valuable aid in furnishing supplies and a corps of nurses' aides. This organization continued its services until the end. Other patriotic organizations in Berkeley also contributed supplies and gave freely of their membership to the corps of nurses.

1400 Influenza Cases in University

The military medical detachment had not been organized at the time of the outbreak, and the records are therefore imperfect and unreliable. It may be said, however, that between six hundred and seven hundred men were ill, most of them recovering in a few days. There was probably an equal or slightly larger number affected in the non-military student body, a majority of whom received medical attention from the University physicians.

Pneumonia made its appearance about the second week of the epidemic and caused great anxiety. There were ten deaths in the Students' Army Training Corps out of about seventy-five cases. There was an equal number of deaths in the non-military student body and one in the faculty. The military pneumonia patients were early segregated in a ward in one of the barracks, and Dr. Walter E. Bates was given exclusive charge of that ward. He was indefatigable and his efforts did much to keep down the mortality, for the disease was very virulent.

The University of Cailfornia Auxiliary of the Berkeley Chapter of the American Red Cross, through its Supplies Department, manufactured 23,991 gauze masks during the influenza epidemic. There were 648 women students of the University enrolled in this department.

Women Students Volunteer

Excellent service was rendered during the influenza epidemic by the women students of the University working under the direction of Miss Lucy Stebbins, the University Dean of Women, and Dr. Lillian Moore of the Department of Physiology, Volunteer Supervisor of the Student Workers. The Student Volunteer Home Service Committee of the Women Students between October 22 and December 18 made 1799 visits of investigation in aiding those affected by the influenza epidemic. A total of 351 influenza patients among the women students received treatment or were visited by members of the committee. Two hundred and ten visits were made to families outside of the University suffering from influenza, for which 78 helpers and nurses' aids were employed. Three hundred and twenty volunteer workers served under the committee; 125 nurses' aids and helpers were employed as nurses at the Berkeley Municipal Hospital in four to eight hour shifts, from one to three times a week; and 30 served at the State School for the Deaf and Blind. In most cases the helpers, some of whom were appointed primarily to make visits of investigation, performed any needed work in the sick room or home, waiting on the patients, cooking, washing dishes, scrubbing floors, etc. Nurses' aids were volunteer students trained in the diagnosis and treatment of influenza under the supervision of Dr. Ruby L. Cunningham of the Infirmary staff.

Everyone who was connected with the admirable organization and management of all this volunteer women's work merits the recognition and thanks of Army and community; and the young women who labored under their direction must be counted to have served in the cause as faithfully as any.

Military Bureau Established

The Military Bureau of the University was established as a result of a resolution passed by the Regents of the University before the formal declaration of war, which placed the resources of the University of California at the disposal of the national government in the event of war. The Military Bureau soon afterward came into existence, as one means of carrying out this action, with Dr. L. J. Richardson, Associate Professor of Latin, as Director, and Homer Havermale, Alumni Secretary, as Manager. Its first business, under date of April 12, 1917, was to ask all men of the University body—faculty, alumni, and undergraduates—to fill out a personnel index card. The request provided for a statement of technical or professional training and experience which might be utilized in the war. The responses numbered 3070, and nearly all offered services in one form or another.

Ambulance Unit Recruited

At the request of the government, working through the Intercollegiate Intelligence Bureau at Washington, D. C., the Military Bureau on May 9, 1917, commenced to recruit an ambulance unit of thirty-six men. The University had at that time sent very few men to the front and it was therefore possible to secure men qualified to render service of the highest sort. As a rule, those sent had had full University training, including two or more years of military drill; many of them spoke French; quite a number had taken the University course in First Aid. They were all experienced automobile drivers. When these men reached Allentown, Pennsylvania, where such groups were brought together for inspection, the examining medical and military officers gave them a high rating and arranged to have them sent at once to France. Consequently they were transported across the Atlantic in August, 1917, and were at once attached to the French Army. The fact that the French Army has kept these men in constant service of a most responsible character in centers of great military activity, and that many of them have been cited for bravery, indicates that the unit has been regarded as highly qualified for its work.

The field of work of the Bureau soon was enlarged from the University to the state and to the Pacific Coast. Branch bureaus have been established over the state and in Honolulu and Alaska; and by November 1, 1918, there were twenty-four active branch offices whose managers had been chosen from the ranks of the alumni of the University.

2000 Persons Per Month Are Given Advice

Since its establishment, the Military Bureau has developed three separate functions: it serves as an information office, a personnel office, and as a liaison office between the University and various military departments and bodies. An average of 2000 persons per month has sought the Military Bureau for information and advice. An equal number of letters requesting information has been answered by this office each month. Branch bureaus have interviewed an average of ten people daily. Many people have sought information regarding draft regulations, army and navy orders, military procedure and methods.

Official Recognition Given Bureau

As a personnel office the Military Bureau has occupied a distinctive place in the general military establishment. For many months the office was connected with the Intercollegiate Intelligence Bureau, a civilia body operating with the approval of the War Department. Th absorption of the Intercollegiate Bureau by the Adjutant General's office brought a new standing to the Military Bureau which is now directely connected with that office in Washington From the Adjutant-General's office requisitions for skilled me come to the Military Bureau. These calls come also from variou department chiefs who look to universities for their personnel Since the organization of the office more than 400 calls hav been received, many of them being requests for specialists These calls are made known to the public and to the alumni o the University through the newspapers, the University publications and the *Alumni Fortnightly.* Applicants have been exam ned and either inducted or their credentials rated by committee men in the faculty and then sent to the authorities requesting ssistance.

1400 Persons Found Places In Service

The Military Bureau has also helped men and women to secure places in the national service. Persons who decided to offer their services to the Army, Navy or other branches of the national government have sought the Military Bureau for information and direction. The office in this phase of its work has been somewhat like an employment agency. Its files have contained the names of many persons who have expressed themselves as willing or anxious to serve their country during the period of the war. Each of these candidates filled out a prescribed questionnaire setting forth his training as well as his professional or business experience. The office then endeavored to inspect all government calls with reference to applications and, wherever consistent with the country's interests, to help candidates to find places in the service. The office has assisted in this way more than fourteen hundred persons, a large percentage of whom have secured positions.

Wide Variety Of Calls Handled

As a liaison office the Military Bureau has served as a contact point between the University and military offices and boards. It has served as headquarters for committee organizations aiding the military establishment; also as headquarters for officers who have desired to make use of University facilities. It has placed the volunteer services of faculty members at the disposal of military departments. The Bureau aided the Adjutant-General of California in organizing committees to instruct registrants in matters of hygiene and morale. Through the coöperation of the Summer Session the Military Bureau registered and assigned more than two hundred volunteer registrars for the September 12th draft.

Since the signing of the armistice on November 11 and the consequent closure of inductions, the Military Bureau has devoted its time to the placing of reconstruction workers, nurses' aids and hospital assistants. When the notice was received which closed inductions, there was an urgent call on file for candidates for the Officers' Training Camps, Coast Artillery Corps, at Fort

Monroe, Virginia. Sixty women were needed in the Telephon division of the Signal Corps. Branch bureaus were assisting i giving publicity to the calls for men needed in the Air Service Tank Corps and Motor Transport Corps.

Following is a statistical report of the work of the Militar Bureau for the period January 10 to November 11, 1918:

REPORT OF MILITARY BUREAU

January 10 to November 11, 1918

Personal calls	17,439		
Pieces of mail handled	26,558		
Nominations			
Air Service, Ground and Flying Sections		96	
Artillery		217	
Engineers Reserve Corps		157	
Infantry		112	
Medical Corps		112	
Motor Transport Corps		23	
Navy		78	
Ordnance Department		145	
Quartermaster Corps		40	
Signal Corps		182	
Intelligence Service, Army and Navy		6	
Chaplains		2	
			117
Civilian:			
Red Cross		51	
Y. M. C. A.		97	
Civil Service, War Service Exchange, Women's Collegiate Section, etc.		139	
			2
Total			14

Non-Military Emergency Courses The experience of the Summer Session of 191 made it apparent that there were many lines non-military service for which intensive traini covering a period of from twelve to sixteen weeks might be orga ized at the University. In August a committee on non-milita emergency courses was appointed to report to the President on the advisability of organizing such training by means of groups of courses to be given in the fall term. The committee studied both the popular demand and the national need and found that the largest field for such work lay in offering to qualified women training in the special application of their previous education and experience to the needs arising from war.

Women Trained for War

The following groups of courses were immediately arranged: (1) Pre-nursing courses, aimed at relieving training schools for nurses of the theoretical work and to prepare young women to complete the course in any army or civilian training school in two years instead of three; (2) courses for Reconstruction Aides in Physio-therapy, who will assist in military hospitals in the rehabilitation of wounded men; (3) courses for Reconstruction Aides in Occupational therapy, who will assist in military hospitals in the first stages of the reëducaton of wounded men; (4) courses for Teachers and Demonstrators in Food Conservation. The first three groups conformed to the advice, suggestions and requirements of the Office of the Surgeon General. The fourth group was planned in harmony with the needs and suggestions of the Food Administration. All four groups were offered for the fall term. Fifty-nine women who met the requirements as to age, physique, previous training and personality were enrolled.

Enrollment Demonstrates Interest

In addition to these groups for specially qualified women the committee felt that certain single courses which elucidated specific war time problems or met a definite war need, should be offered for regular undergraduate students. A course in the Economics of Immigration with emphasis on the problems of Americanization was approved. One hundred and sixteen students enrolled in this course. A course in the Problems of Food Conservation as outlined by the Federal Food Administration was offered. Three hundred and sixty students enrolled, seventy of whom also undertook laboratory work in food conservation. The Department of Hygiene, at the request of the committee, agreed to give First Aid and Home Care of the Sick, a course aimed to train women to meet the ordinary emergencies of accident and illness. Eighty students enrolled. The committee also recommended and secured approval for the organization of classes in the production of Red Cross supplies. One thousand and eight students enrolled in this work.

Work to be Carried Forward

With the signing of the armistice, the committee reconsidered the question of repeating the pre-nursing courses and courses for Reconstructio Aides in Physio-therapy and Occupational Therapy as originall planned. The office of the Surgeon-General advised a continuance of this for at least four months and the committee ha arranged for the repetition of these groups in the second half-year. The demand for courses for Teachers and Demonstrator in Food Conservation is daily increasing and these courses als will be repeated and developed. The committee plans furthe to carry on, by means of a seminar in the problems of labor an immigration, the interest in Americanization; to repeat th course in the problems of food conservation and to continue th production of Red Cross supplies.

By means of the foregoing programme the committee ha been able to bring the group of non-military students who wer not already in the midst of professional training (medicin nursing, teaching, etc.) into closer touch with the needs of th time and to equip them for definite service.

Course in Employment Management

Another of the War Emergency activitie undertaken by the University at the request of th Federal Government was the inauguration of course in Employment Management. Early in the war th Government realized that its programme of shipbuilding, manufacturing supplies, etc., was being seriously handicapped by labo troubles of various sorts, and especially by an exceedingly hig rate of labor turnover. An Employment Management Divisio was established under the War Industries Board and Captai Boyd Fisher, Ord.R.C., was placed in charge. A number o universities located in industrial centers were invited to coöperat in this original undertaking and to establish courses in Employment Management. This was subsequently done by the Un ersities of Rochester, Harvard, Columbia, California, and 'ashington, in the order named. The courses were to be of six eeks' duration and were to be repeated until the local demand ıd been fully met. Only representatives of employers and a w others who had had special training and experience were to admitted.

ay Region
ıdustries
re Studied

At this University the work was placed under the direction of Dr. Ira B. Cross, Associate Professor of Economics and Acting Dean of the College Commerce, who was assisted by Dr. R. A. Sigsbee of the merson Company, New York City. The course opened on Sep- mber 3 and continued until October 11, 1918. During the six eeks, lectures throughout the day and frequently at evening, ips to near by industrial plants, discussions, reports, etc., gave ie twenty-six members of the class a thorough survey of the ld and opened to them the opportunity of employing the most odern methods in maintaining industrial peace and in secur- g and retaining a contented working force. The members of ie class came mainly from the San Francisco bay region and presented the following industries, in which about 50,000 nployees were engaged: oil, shipbuilding, quarrying, laundry, tton cloth, copper, sugar refining, electric lamp manufacturing, emical, fruit and fish packing, and paint manufacturing. The en and women enrolled were mature of age and experienced the field discussed, almost all of them being the Employment anagers of the firms represented, although one was the superin- ndent of a large local oil refinery and another was the assist- ıt superintendent of the state's largest powder plant.

At the conclusion of the course a permanent "Service and mployment Managers' Association of California" was organ- ed as a means of continuing the work which had been started the University. By this means it is hoped to reach other firms ıd employers and thus assist in making possible the inaugura- on of better relations between the employers and employees California.

A reorganization of the administration of the University xtension Division has been deemed expedient and accordingly a revised plan of administration has been carefully outlined b the Acting Director, Professor Leon J. Richardson, and th University Extension Advisory Board. It is presented diagrammatically on the opposite page.

Plan for Extension In State

This plan represents an ideal scheme of University Extension organization which is far fro being realized at present. This is indicated by th number of positions yet to be filled.* It will require a larg expenditure to carry it out in full. But it represents the Extension Board's conception of the scope, the needs, and the administrative methods of university extension. Under this pla instructors may confine themselves to instruction, organizers t organization, supervisors to supervision, clerical assistants t clerical work, and directors to direction, in a manner impossibl under the old plan.

Within the year a branch of the University Extension wa established in Los Angeles thus initiating the plan of distric organization as indicated by the scheme presented in th diagram.

Interest Increases in Class Work

During the past year University Extensio class work in central California consisted of 40 classes conducted in 17 different cities, with a tota enrollment of 6901. This represents an increased enrollmen of 1887 over that of the preceding year. One hundred an twelve courses were offered under the supervision of 74 instructors and were attended by 4526 students. The average attendance was 88 per cent, an increase of 4⅔ per cent over that o the preceding year. Since attendance is optional, this is regarde as an index of interest on the part of the student.

Naval Courses Train Men for Commissions

The war emergency work received a large shar of the effort expended on class instruction. Th most conspicuous development along these line was that of the Naval preparatory courses, consisting of instruction in Navigation and Nautical Astronomy, Seamanship an Ordnance and Naval Regulations, conducted in the Ferry Buil ing in San Francisco under the immediate supervision of Pr

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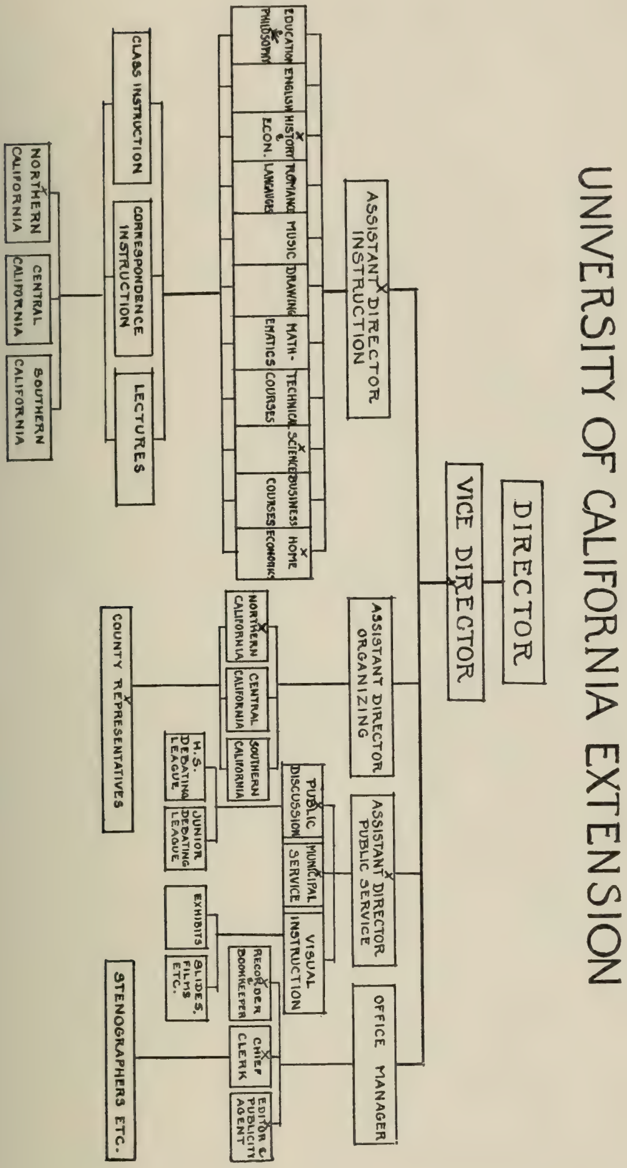
* An unfilled position is indicated by a cross.


UNIVERSITY OF CALIFORNIA EXTENSION
DIRECTOR
VICE DIRECTOR
ASSISTANT DIRECTOR INSTRUCTION
EDUCATION & PHILOSOPHY
ENGLISH
HISTORY & ECON.
ROMANCE LANGUAGES
MUSIC
DRAWING
MATHEMATICS
TECHNICAL COURSES
SCIENCE
BUSINESS COURSES
HOME ECONOMICS
CLASS INSTRUCTION
CORRESPONDENCE INSTRUCTION
LECTURES
NORTHERN CALIFORNIA
CENTRAL CALIFORNIA
SOUTHERN CALIFORNIA
ASSISTANT DIRECTOR ORGANIZING
NORTHERN CALIFORNIA
CENTRAL CALIFORNIA
SOUTHERN CALIFORNIA
COUNTY REPRESENTATIVES
ASSISTANT DIRECTOR PUBLIC SERVICE
PUBLIC DISCUSSION
MUNICIPAL SERVICE
VISUAL INSTRUCTION
H.S. DEBATING LEAGUE
JUNIOR DEBATING LEAGUE
EXHIBITS
SLIDES, FILMS ETC.
OFFICE MANAGER
RECORDER & BOOKKEEPER
CHIEF CLERK
EDITOR & PUBLICITY AGENT
STENOGRAPHERS ETC.

fessor A. O. Leuschner. These courses were designed to prepare men for service in the United States Navy and in the Naval Reserve. The work was organized with the sanction of the Commandant of the Twelfth Naval District and was approved, after inspection, by Rear Admiral Ross of the Bureau of Navigation. About seven hundred and fifty students availed themselves of this opportunity for intensive training. Other courses bearing on war emergency service were Shipdrafting, Marine Engineering, First Aid, Nursing, and occupational subjects such as Typewriting, Stenography, Wireless Telegraphy, Automobile Repairing, etc. An effort was made to stimulate an interest in the study of the French language.

Instruction was furnished for large organizations in response to requests for some specialized types of work. Among the institutions so served were: American Institute of Banking, Business Development League of Oakland, Credit Men's Association, Hamlin School for Girls, Kentfield Women's Club, National League for Women's Service, Oakland Advertising Club, Oxnard Red Cross Unit, San Francisco Advertising Club, St. Francis Welfare League, Stockton Advertising Club, Westinghouse Electric Company.

Reduce Fees To Enlisted Soldiers

Since July, 1913, when University Extension was organized upon the present plan, 10,498 enrollments for instruction in correspondence courses have been received. For 1917–18, the enrollments totaled 2456—the largest number received in any one year—and this despite the hindrance of war conditions. The enrollments were made by 2268 persons, of whom 90 were soldiers and sailors, who availed themselves of the Extension offer of a reduced enrollment fee to all enlisted men; 1818 were persons who paid regular fees, 280 were inmates of San Quentin and Folsom Prisons, to whom instruction was supplied without charge, and 90 were men in the United States Disciplinary Barracks on Alcatraz Island, for the correction of whose lessons the government pays a nominal fee.

The places of residence of the correspondence students were widely scattered. Every county of the state, save Alpine, and thirty-seven states of the union, were represented. And students have enrolled from Hawaii, Samoa, Australia, China, and the Malay States.

Correspondence Courses Meet Varied Demands

One hundred and seventy-five courses of instruction are offered. Of these, forty-two are new courses which have been added within the year, and thirty-one are old ones which have been completely revised. During the past year, 5869 specific inquiries regarding instruction by correspondence were received. Of these inquiries, 4935 were for subjects in which adequate instruction is offered. But there were 934 demands which correspondence instruction was unable to meet. The three subjects for which unmet demands were greatest are home economics, science (chiefly physics and chemistry), and engineering.

102,500 Hear Lectures in Many Cities

Notwithstanding conditions brought about by the war, tending to lessen the demand for lectures, the University Extension supplied 452 Extension lectures in 81 cities, employing a staff of 30 persons. The aggregate attendance at these lectures was 102,500 persons; the average attendance 227. The work was offered in the form of single lectures and lectures given in series. The subjects discussed may be classified under the following heads: vocational, technical, political, economic, geographic, historical, popular, literary, educational, scientific, and lectures on music and art. A novel feature in the field of University Extension lecture activities has been the combination of musical recitals with lectures. Care has been exercised to select only the best musicians for these recitals, approximately twenty well-known artists being made available to the people of the state. Significant of the type of lecture work to be enlarged upon in the future is the course of twenty free lectures on Public Utilities given to the leading business men of San Francisco.

Debating Leagues Organized

The principal work in the field of Public Discussion during the past year was the conducting of the Interscholastic Public Speaking and High School Debating League. Eighty-three high schools, with an aggregate attendance of approximately 40,000 pupils, were enrolled in this League. These schools engaged in 215 contests attended by about 35,000 people. In the contests over 2000 students participated.

Motion Pictures Form Part of Instruction

During the past year, as in previous years, the work of the Bureau of Visual Instruction has consisted of organizing and circulating stereopticon slides, motion picture reels, and industrial exhibits. Special effort has been made to meet demands incident to war activities and to further, so far as our resources would permit, instruction that would conform to government aims. One hundred and ninety-two organizations, consisting principally of high schools, colleges, clubs and churches, made use of the stereopticon slides of this department. Current events, lectures, illustrated by about forty stereopticon slides each, were circulated among 288 organizations with an estimated attendance of 95,000 persons. Effort has been made to catalogue and make available for circulation about 26,000 slides belonging to various departments of the University. Sixty-five additional reels from the Bureau of Commercial Economics of Washington, D. C., were received for circulation by this department. A notable addition to our available material for circulation is the film "How Life Begins," prepared by Mr. G. S. Stone and Professor J. S. Long. Nine hundred and twenty organizations of the state were supplied with motion picture film during the past year. One hundred travelling industrial exhibits are now available for circulation among the schools of the state. The purpose of these exhibits, when first circulated, was to supplement information concerning various industries. It has since become evident that the industrial exhibits form a certain part of vocational guidance work.

Extension Branch in Los Angeles

A branch office of University Extension was opened in Los Angeles on August 6, 1917. Miss Nadine Crump, formerly of the Berkeley Extension staff, was placed in general charge. Two types of service were especially emphasized in southern California—class and lecture.

The organization of class work began on October 10. Since that time ninety-four classes have been organized: seventy-four in Los Angeles, six in Hollywood, four in Glendale, four in

Pasadena, two in Riverside, two in Santa Monica, one in San Bernardino, and one in Ontario. The total enrollment in these classes was 1519, the actual number of students 1103. The average attendance in extension classes was eighty-seven per cent, almost exactly the same as in the classes conducted in and about San Francisco. Fifty courses were offered and thirty instructors employed. Most of the classes closed in June, but some continued during the summer.

About one hundred and fifty lectures for various communities in the southern district were also provided. Courses of lectures have been given in twenty-nine towns and cities. A course of twelve lectures on topics relating to the war was offered free to the public at the Polytechnic High School in Los Angeles. These lectures were given with one exception, without compensation by professors from the University. The audiences varied in numbers from seventy-five to eleven hundred.

Southern District Cordial

Indicative of the cordial reception accorded extension work in southern California is the hearty coöperation of organizations and other universities and colleges. In the work of instruction itself, professors from Throop Polytechnic Institute, the University of Southern California, Occidental College, Pomona College, and the Los Angeles Normal School served most ably. This made possible a high type of instruction, all of the courses being of university grade and many carrying university credit. The classes were conducted in the school buildings, in the audience room of the Woman's University Club, in the rooms of the Railroad Commission, the Industrial Accident Commission and the Supreme Court. Such indications, together with the general enthusiasm of the students, promises well for the future of the work in this district.

University Extension centers should be organized in a number of important cities throughout California which are now insufficiently served. San Diego, Santa Barbara, Fresno, Sacramento, Red Bluff, and Eureka are examples.

The natural growth of the work in Los Angeles and the south necessitates a larger expenditure. It is eminently desirable that

Foreign Trade Courses

a well balanced group of courses should be organized at once in Foreign Trade. They should cover the technicalities of exporting and importing, including foreign exchange, languages, and commercial geography. They should be open at little or no cost to the employees of business houses in San Francisco, Oakland, Los Angeles, San Diego, and elsewhere.

The Federal Board of Vocational Training is already working on this urgent problem, but Chambers of Commerce are aware that much local effort should be speedily put forth to meet the whole need. Here is work that the University of California is well adapted to undertake. It should have the necessary funds to coöperate in the fullest way with organizations already at work in this field.

Rubber Supply in Native Plants

The Department of Botany has been investigating the supply of rubber contained in certain native plants, which could be drawn upon in case importations should be seriously interfered with, through enemy action or otherwise. These investigations have reached such a stage that it can now be stated with certainty that a considerable amount of rubber is available. Though the plants in which it is found carry but a comparatively small percentage of rubber, it is of good quality and when vulcanized the product is very satisfactory. Thus the occurrence of a reserve native supply of rubber for use in a national emergency, to replace, to a certain extent at least, present importations has been demonstrated. The Department of Botany is in addition investigating the possibility of bringing these native rubber bearing plants under cultivation. These plants withstand alkali and are exceedingly resistant to cold and thus might be of great importance in desert agriculture and the reclamation of waste areas in general.

Work of Importance in Chemistry

The work of the Department of Chemistry has been divided between investigations of native resources of particular war emergency importance, and special war research in coöperation with departments in Washington. Important contributions have been made to our knowledge of the recovery of potassium and associated products from the bitterns produced at salt works and from alkali lakes. Attention has also been given to the utilization of products of wood and other wastes, the securing of tannin from redwood, and the use of tin and leather scrap. In coöperation with a number of departments in Washington the Department of Chemistry has carried on a series of investigations which contributed definitely to the information positively required for initiation of the war programme in France. The members of the Department of Chemistry have been most successful in solving a variety of problems assigned to them by the federal authorities.

Survey Deposits of Manganese

Under the direction of Professor George D. Louderback and in coöperation with the Department of Mining of this University and the United States Bureau of Mines, a series of exceedingly important researches have been carried on. That having to do with the manganese situation in California has perhaps been the most vital, in view of the great desirability of reducing imports of manganese to release shipping. Manganese bodies have not only been located and mapped, but particular attention has been given to the nature of the occurrence and origin of the ore. The problems connected with the metallurgy of manganese and the handling of low grade ores have received attention.

Zoologists Work on State Health Board

The types of important zoological researches that have been carried on are: First, investigations bearing upon problems of sanitation or medical research (by arrangement with the State Board of Health, zoological work of this kind has been made one of the research projects of the Board and members of the Department of Zoology have become Biologists of the Board of Health); second, studies relating to increase of our animal food supply. Methods of preserving fish and other aquatic products which hitherto have not been used as food are among the highly important research problems being actively investigated by zoological experts in coöperation with various government bureaus. An inventory is being made of the utilized and hitherto unutilized species of fishes and other aquatic animals of California. The invertebrate food resources of the California coast are being examined and, with the assistance of the United States Bureau of Fisheries, a very complete survey of the mussel supply is under way.

Distribution Of Fish Is Scripps Problem

The Scripps Institution for Biological Research is engaged in studying the factors controlling the appearance, distribution, and abundance of food fishes on the southern California coast. This is a highly important piece of research which will require the best efforts of a number of trained investigators over a number of years.

Observe Fiftieth Birthday

The year just ended marked the conclusion of the first fifty years of the University's life, for it was on March 23, 1868, that Governor Henry H. Haight granted approval to the act creating and organizing the University of California. At that time there existed in Oakland a College of California, which had opened its doors in 1860. This college, with classes numbering from two to six members, served as the foundation upon which the new University of California was built. For four years (1869–1873) the old college building in Oakland proved sufficiently large, but in 1873 the University moved to its permanent location in Berkeley.

Semicentenary Dedicated to Nation's Task

Each year the University has celebrated Charter Day with fitting ceremony. But in 1918, it was deemed proper that the end of the fiftieth year of the life of the University be marked in a distinctive manner. A mere jubilee, however, and a recital of past achievements would have been out of harmony with the grim struggle in which the nation was engaged. The Semicentenary, accordingly, developed into a celebration symbolizing the progress of western scholarship during the last fifty years, and giving evidence of the University's stern application to the service of the nation in its time of need.

International Relations is Theme

The rapidly increasing importance of international relations and the reciprocal interests of the states about the Pacific Ocean, combined with the geographical position of the University fronting the Golden Gate. suggested the plan of holding a conference on international relations as the logical contribution of the Semicentenary to the nation. The importance of a notable gathering of men bent upon counselling together concerning problems whose solutions would diminish the occasions of international friction and would advance the general weal was immediately recognized. Seven hundred invitations were therefore sent to other universities and colleges, and twenty-one foreign nations were asked to send representatives.

Favor Recurrent Conferences

The great distances to be travelled, the need for economy, and the transfer of so many members of university faculties into the national service made the number of representatives smaller than would otherwise have been the case. Yet almost every important university in the allied and neutral states sent a response; and all of the institutions of collegiate grade on the Pacific coast, most of the more important universities of this country, and many foreign nations sent distinguished delegates to attend in person. The five meetings of the Conference were accordingly of very great interest. Eminent men from all parts of the world, the majority, however, from states bordering on the Pacific Ocean, discussed problems of vital international interest. The subjects included the history of the Pacific Ocean area, aspects of the international labor problem, oceanographic, meteorologic and biological problems of the North Pacific, problems of agricultural education and research, and aspects of trade. The final meeting considered favorably a plan for recurrent conferences on international problems of the Pacific.

Scholars Deliver Addresses

Among the important addresses delivered at this time were the Earl Lectures by Professor James Henry Breasted of the University of Chicago; the Weinstock Lecture by Professor James Hayden Tufts, also of the University of Chicago; the Faculty Research Lecture by Professor Rudolph Schevill of the University of California; and the Hitchcock Lectures by Professor George Fillmore Swain of Harvard University. Public addresses of great significance were given by visiting scholars almost every hour that the large auditoriums of the campus were available. In addition, many departments in the University prepared exhibits and displays, and organized important subconferences and lectures.

Invitations to take part in these observances were sent also to the alumni. They, it was felt, would be visible records of the work of the University in its fifty years of existence. The response of the alumni was indeed gratifying, and the University's faith in their loyalty was justified. The alumni headquarters made every effort to welcome them; it provided res rooms, furnished information, and supplied guides from among the students.

Many Alumni Participate

Most of the classes of graduates held reunio dinners on or near the campus; the alumni as whole held an informal gathering in the Harmo Gymnasium and at that time paid tribute to Professor Georg C. Edwards, then about to retire from the service of the University as Professor Emeritus. The period of his connection wit the University as student and instructor has been contemporaneous with the University's life, and the love he has inspire in its sons and daughters is deep and abiding. There was als a more formal assembly of the alumni on the occasion of th annual alumni banquet.

To many of the alumni the campus was almost entirely u familiar; the old landmarks were gone and new buildings ha taken their places. Two of the recently constructed buildin were dedicated during the Semicentenary. One of them, Gilma Hall, is a much needed building for the Department of Che istry, constructed from the funds generously vot to the University by the state. The other was o of the few structures on the campus built for beau

Dedicate Sather Tower

alone; this is the Sather Tower, the bequest of Mrs. Jane Sather. A marble chair in the Greek Theatre was dedicated the memory of Professor F. V. Paget, for many years Profess of French in the University. A bust of John M. Eshlema, alumnus of the University and loyal servant of the Universi and the state, was unveiled with commemorative addresses Wheeler Hall.

Acknowledgment of the military activities of the University came on March 22, Military Day. An important event of the day was the parade and review of a brigade composed of eight hundred and fifty members of the University's School of Military Aeronautics, the fifteen hundred cadets of the University's Reserve Officers' Training Corps, and a battalion of sailors from the United States Naval Training Station on Yerba Buena Island. As the most impressive event of the day, the service flag, then representing twenty-two hundred sons of the University in the service of the nation, was unfurled from the belvedere of the Tower.

Service Flag Is Unfurled

Fourteen Receive Degrees

Charter Day itself marked the end of the week of observances. The speaker of the day was President Harry Burns Hutchins of the University of Michigan. At this meeting the delegates presented their credentials and were formally welcomed. In accordance with the action of the Board of Regents, the honorary degree of Doctor of Laws was conferred upon fourteen distinguished scholars. The men thereby received into the list of alumni of the University are:

WILLIAM THOMAS REID, head of Belmont Academy, only living ex-president of the University of California.

BERNARD MOSES, Professor of Political Economy Emeritus, University of California.

WILLIAM MILLIGAN SLOANE, Professor of History, Columbia University.

JAMES HENRY BREASTED, Professor of Egyptology and Ancient History, University of Chicago.

GEORGE FILLMORE SWAIN, Professor of Civil Engineering, Harvard University.

MASAHARU ANESAKI, Professor in the University of Tokio.

FRANKLIN FAIRCHILD WESBROOK, President of the University of British Columbia.

UNG-YU YEN, Professor in the University of Peking.

HENRY SUZZALLO, President of the University of Washington.

A. ROSS HILL, President of the University of Missouri.

CHARLES RICHARD VAN HISE, President of the University of Wisconsin.

HARRY BURNS HUTCHINS, President of the University of Michigan.

CHARLES CESTRE, Professor of English Literature, University of Bordeaux, France.

Thus did the University commemorate the completion of its first fifty years.

Semicentennial Publications Are Issued

One method of observance that is a durable record not only of the Semicentenary, but also of the University's scholarly activities, has been the publication by the University of a series of works in subjects ranging from agriculture to Greek. These works, fifty-four in number, contain important contributions to the world's scholarship by members of the University, and will serve to commemorate in abiding form the University's Semicentenary.

Summer Session Enrollment

The experiences of eastern summer sessions in 1917 indicated a probable falling off of about twenty-five per cent in the attendance at the University of California Summer Session of 1918; the newly instituted summer quarter at the Leland Stanford Junior University and the opening at Los Angeles of a Southern Division of our own Summer Session compelled us to face the possibility of an even greater decrease in our enrollment at Berkeley; plans were made accordingly. Our students, however, seemed to find in the wide opportunities thus offered them a valuable means to that re adjustment of society which was made necessary by the Great War. In the Berkeley Summer Session the enrollment was 3479 a decrease of only about twelve per cent. In Los Angeles, 630 students were enrolled; the total, 4109, was thus actually in excess of 3979, the enrollment in 1917. In Berkeley, moreover, a second term of six weeks immediately following the Summe Session, organized for War Emergency Courses, enrolled 59 persons; 4703, the total for the summer of 1918, has been exceeded only by that of 1915, the Exposition year, when th student body numbered 5364.

Of the 3479 registered in Berkeley, 1671 were teachers; 52 were men; 2957 were women; 2708 were Californians; 72 registered from other states, and 41 from foreign countries.

The second term was an interesting experiment. The bulleti was not widely circulated because, owing to inevitable delays was not published until shortly before the beginning of instruction. There were, however, 594 students in attendance, of who

Second Term of Session Successful

239 had been enrolled in the first term. Many had been registered as students in the fall or spring terms of the University, and many were teachers. It is evident that if the experiment were repeated, this number could be very considerably increased by timely announcement. It is noteworthy that the attendance at the Summer Session of 1907 was only 522. The second term was made possible, however, by the change in the University calendar, postponing the opening of the regular session until September 30. The return to the old calendar will not permit the continuation of the second term of the Summer Session. It is undesirable, moreover, that instructors should engage in teaching during the entire twelve weeks of the vacation, or that the faculty should be changed at the end of the first six weeks; some adjustment permitting the absence of instructors during one of the regular terms would be necessary if the second term were to be continued.

Summer Session Is Instituted in Los Angeles

The session at Los Angeles must be counted a success. The attendance, 630, was comparable with the 661 enrolled at Berkeley in 1908, and highly creditable in view of the difficulties which had to be overcome. The Los Angeles Board of Education generously placed at the disposal of the University the new Los Angeles High School building, a beautiful modern structure, ample in size and admirably equipped for our purposes. Many of the public lectures were held in a club house, rented for the purpose, near the center of the city. The city, moreover, generously permitted the use of the auditorium in its Recreation Center for the Community Chorus of the Summer Session. Many persons were glad to avail themselves of the opportunities offered; and many expressions of satisfaction and approval were received by Dean Monroe E. Deutsch, who was in charge of the session.

War Courses of Interest to Thousands

The large attendance upon all of the sessions is to be accounted for by the special timeliness of the courses. War work of one sort and another was everywhere emphasized. Most notable, perhaps, was the group of "schools," or groups of courses, instituted at Berkeley and continuing through the twelve consecutive weeks of the two terms.

These included a War Emergency Course in Social Economics, a School for the Training of Reconstruction Aides, Courses for Credit in Schools of Nursing, a War Emergency School for Stenographers, and a Course for Laboratory Technicians. Both in Berkeley and in Los Angeles public lectures dealt with war topics. Among the most notable were those delivered by Dr. Stockton Axson, National Secretary of the American Red Cross, Dr. Charles R. Brown, Dean of the Yale School of Religion, Dr. George Adam Smith, Vice-Principal of Aberdeen University, Lieutenant Bruno Roselli of the Italian Army, and Professors H. Morse Stephens and Albert J. Carnoy, of the University of California.

Flexibility of Session Is Evidenced

All in all, the experience of 1918 gives new evidence of the special value of the flexibility and adaptibility of the Summer Session. Its six weeks' courses offer opportunities for concentrated training in such special fields as the time demands. With reference to these fields, its faculty, which changes from year to year, is engaged. The Summer Session is sufficiently independent of the University to create or suppress departments, to try experiments in men and courses as need may arise, and to provide for its maturer students what they desire. Absence of formal entrance requirements permits the admission of all those who can profit by its courses.

Need for Students' Union

It is expected that with the close of the war and the resumption of normal building activities in the state a renewal of the plan to construct a students' union will be brought forward. Since the demolition of North Hall, the students' activities of the University have been concentrated in the North Hall basement, which was left standing for this purpose. This structure is not only inadequate as to size; it is thoroughly unbeautiful architecturally and detracts from the rightful splendor of the University Library, its nearset neighbor. There is strong need for a student meeting place about which the student life of the University may center. The University publications must be housed. The Associated Students' Store is in cramped quarters. There is need of a cafeteria or lunch room establishment to accommodate those students who daily come to the University from a distance. There is also need for a student auditorium in which classes and the student body organization itself may congregate. The students, in coöperation with the Alumni Association, eventually will bring the matter before the people of the state. It is to be hoped that some means may be found to supply the worthy demand which the years have here created.

Crocker Eclipse Expedition

Through the generosity of Regent William H. Crocker an expedition to view the solar eclipse of June 18, 1918, was sent from the Lick Observatory to Goldendale, Washington, about 100 miles from Portland, Oregon. The expedition was headed by Dr. W. W. Campbell, Director of the Lick Observatory. The sky, which had been cloudy all day, cleared marvelously for the eclipse, but within a few minutes afterwards was again overcast. In this respect the Goldendale expedition had the complete advantage over the other twelve solar eclipse expeditions sent from the Lick Observatory, all of which experienced cloudy skies. The time of the eclipse was limited to 118 seconds. In this short space one motion picture film was taken and 41 photographs of the corona were obtained by the expedition. It was expected that new scientific data in regard to the nature of the sun itself and its surrounding atmosphere would result from the observations.

Urgent Need of Fields for Sports

One effect of the establishment of the Students' Army Training Corps Unit at the same time that various other military and naval schools were being conducted by the University was to evidence beyond doubt the imperative need of greater playground and drill field facilities. During the existence of the Students' Army Training Corps it was found impossible to permit the students to engage in organized sport as extensively as was desired by the military authorities in Washington and by the Physical Education Department of the University. The west field was enlarged by clearing the ground immediately south and extending to Harmon Gymnasium. Even this increase in space was insufficient to accommodate for drill purposes the men of the various military and naval units and to allow participation in sports simultaneously.

There is urgent need of fields which are capable of being devote to baseball, football, soccer, rugby, handball, and various othe forms of sport which may be practiced out of doors. The development of the ten acre field in the northwest corner of the campu immediately west of Hilgard Hall, or the purchase of additiona land in Berkeley, preferably near the University, is of vita importance to the University generations of the years to come

Sather Bells Are Installed

The twelve Sather Bells, the gift to the University of Mrs. Jane K. Sather, reached Berkeley o October 12, 1917, and were installed in the 300-foo Sather Tower, also the gift of Mrs. Sather, under the directio of W. H. Billinghurst, who was sent from England by the bell founders, John Taylor and Sons of Loughborough. Ten minut concerts are held three times daily. In addition to the Chime and the Tower, Mrs. Sather has given to the University the Sathe Esplanade, the Sather Gate, and has endowed the Sather Professorship of History, and the Sather Professorship of Classica Literature.

Joffre Debate Instituted

In honor of Marshal Joffre, the University o California and Leland Stanford Junior Universit are to hold an annual "Joffre Debate." Baro Pierre de Coubertin of Paris is to provide the gold "Médaill Joffre" for the intercollegiate debate, which will be on Frenc affairs, replacing the Carnot debate of former years.

Food Courses Given for Women

The Department of Home Economics inaugurated during the year a course of lectures, demonstrations, and laboratory work dealing with foo conservation problems, in response to an appeal from Mr. Herber D. Hoover, United States Food Administrator. Three series o lectures were given. A complete report on the food conservatio courses instituted to meet the war emergency is contained in th War Service Record of the University, published as a supplemen to this report.

Vocational Teachers to be Trained

The University and the State Board of Education entered into an agreement on January 1 whereby the University undertakes to establish an maintain courses for the training of vocational teachers of agr cultural, trade, and industrial subjects. Classes for vocational training in agriculture are to be maintained at one or more of the following places: the Kearney Farm in Fresno County, the Citrus Experiment Station in Riverside County, and the Davis Farm in Yolo County. The University is also to provide evening training classes for vocational teachers of trade and industrial subjects, and for teachers of continuation classes in civic subjects.

Gift of Howison Library

Mrs. Lois T. Howison has donated to the University a rare collection of books on philosophical subjects from the library of the late Professor George Holmes Howison. It is her desire that these 1235 volumes form the basis of a departmental library for the Department of Philosophy.

Music Scholarship to Make Possible Study in Paris

A scholarship in music has been endowed through a bequest of $30,000 by Elizabeth Patterson Mitchell of San Francisco. The net proceeds from the investment of this sum are to be awarded each two years as a prize to enable a student in music at the University to obtain two further years of musical study in Paris.

Land Board Headed by Dr. Mead

As Chairman of the State Land Settlement Board, Dr. Elwood Mead, Professor of Rural Institutions at the University, assisted in organizing for settlement a tract of 3620 acres irrigable land in Butte County between Durham and Chico. The tract was divided into 53 farms and 21 allotment units for farm laborers, the separate divisions ranging from 20 to 160 acres in extent. A map showing the character of the soil on each farm was prepared by the College of Agriculture and posted for inspection. The Division of Irrigation Investigations of the University, in coöperation with the United States Department of Agriculture, drew plans for an irrigation and drainage system.

Khaki and Blue at Commencement

One-third of the members of the graduating class already had answered the call to colors and were absent from Berkeley when the fifty-fifth Commencement Exercises were held in the Greek Theatre on May 15, 1918. The University service flag on Commencement Day showed 2400 stars, and the Senior class service flag 484 stars. Captain

L. M. Welch delivered 36 military commissions to University cadets, the largest number ever awarded. The degrees conferred by the University numbered 905, as contrasted with 1164 in 1917 The Senior Extravaganza was presented in the Greek Theatre Saturday afternoon, May 11. The Baccalaureate Sermon was delivered on Sunday, May 12, by Right Reverend F. W. Clampett, D.D., of San Francisco, Chaplain of the 144th Field Artillery Regiment. William Kelly Prentice, Professor of Greek at Princeton University and Sather Professor of Classical Literature delivered the annual Phi Beta Kappa address.

Valuable Site Ceded to Regents

By a provision of the Army Appropriation Bill of 1918, the tract of land on the reservation of the Presidio of San Francisco upon which the Palace of Fine Arts stands has been ceded to the Regents of the University, thus insuring the permanency of this institution.

Tethelin Given to University

A medical discovery of the first importance is that of "Tethelin" by Dr. T. Brailsford Robertson, Professor of Biochemistry. Dr. Robertson has executed a deed conveying to the Board of Regents his patent rights in this growth-promoting substance, which he isolated from the anterior lobe of the pituitary body, and which promises to be of great value in causing wounds to heal or shattered bones to knit. It is proposed to devote the proceeds from the sale of Tethelin largely to the maintenance of an Institute of Medical Research, dedicated to research in medicine and especially to research in the physiology, chemistry, and pathology of growth.

Hilgard and Gilman Halls Dedicated

Increased facilities for instruction and for research work have been provided the College of Agriculture through the dedication of Hilgard Hall at Berkeley on October 13, 1917, and the dedication at Riverside of the Citrus Experiment Station Laboratories on March 27. Hilgard Hall furnishes class rooms, laboratories, and offices, while the Citrus Experiment Station offers opportunity for investigations into plant life. The Department of Chemistry has taken advantage of the added space for advanced work afforded by the completion of Gilman Hall, which, however, is not as yet fully uipped. Gilman Hall was dedicated during the Semicentenary eek.

ibrary of rench Thought resented

On Lafayette Day, Thursday, September 6, 1917, the Library French Thought, consisting of 2500 volumes covering virtually all fields of French literature, philosophy and science, was dedicated under the auspices of the . Friends of France, in the French Room of the niversity Library. The volumes were originally assembled for hibition in the French Pavilion at the Panama-Pacific International Exposition, and at the close of the Exposition were presented to the University by the French Government, under the atronage of the Friends of France. M. Edouard de Billy, eputy High Commissioner of the French Republic to the United tates, was sent from Washington to represent the French Govnment at the dedication.

atriotic eetings re Held

The Board of Regents in June, 1918, voted to permit the use f the Greek Theatre for meetings which would be of benefit to America and her Allies, with the proviso that no private person profit financially from any performance. A large number of patriotic meetings was eld in the theatre. Hon. Charles M. Schwab, Director of the nited States Shipping Board, members of the French Mission the United States, and other distinguished visitors to Berkeley, ave been among those who have spoken to students of the niversity and to residents of the bay communities. The University Meetings, held twice each month, have been in the nature of atriotic observances during the period of the war emergency.

ishing ndustry eveloped

Important war work was carried on during the year at the cripps Instiution for Biological Research at La Jolla. The institution, in coöperation with the National Food Administration, conducted experiments on methods, other than canning, of preserving fish; furnished the State ame and Fish Commission information on harvesting kelp beds; nd determined more accurately than had been determined itherto the area for tuna fishing. Important researches on the plankton'' as the food supply of commercial fishes have been arried on. Dr. W. E. Ritter, Director, was appointed Director of Operations of the United States Bureau of Fisheries in thi region, and W. C. Crandall of the Institute staff was named Fis Administrator for southern California under the National Foo Administration.

Research Work in Medicine

The work of the Medical School has been greatly advance through added facilities gained by the utilization of the ne University Hospital. Many members of the facult have been absent on war service and a heavy loa of work has consequently fallen upon the remaining members. Important research work in medicine was accomplished by members of the faculty of the school as a war servic The George Williams Hooper Foundation for Medical Researc has performed noteworthy service in this regard.

Members of the staff of the College of Dentistry who did no enlist for active service acted as examiners of candidates for th Dental Reserve Corps and performed gratuitously a large numbe of dental operations upon drafted men and recruits. A condensed course of instruction in War Dental Surgery was given fo forty-eight officers of the Reserve Corps.

To Find Positions for Soldiers

Through its Employment Bureau, which has operated successfully for the last year, and through the combined efforts o the Alumni Association, the office of the Appointment Secretary and the Secretary of the College o Agriculture, the University hopes to aid alumn former students, and members of the student body who ar returning to civil life from the military service of the government. Efforts are being made by these departments of th University to secure lists of positions and to bring in touch wit employers those returning members of the University body wh are or will be seeking positions. It is proposed so to conduct th organization constructed for the Military Bureau of the Alum Association that it may function immediately as an employmen agency for University of California men and women. The University's own employment bureau has been successful in adjusting salary schedules for clerical workers employed by the University and in supplying the various departments with these worke when needed.

egent
ndows Four
holarships

Regent Isaias W. Hellman has given $50,000 to the University to endow four scholarships for the aid and encouragement each year of four needy, deserving, and competent students in the academic departments. he income on each scholarship will be approximately $500 a ar—of unusual liberality for an undergraduate scholarship.

17 Class
Erect
emorial

The class of 1917 has given the sum of $2000 as a nucleus for a class endowment to the University. The principal of the fund is to be kept intact until 1935 when the plans of the class call for a reunion, at hich time the principal of the sum will be added to by popular bscription, the total amount to be used to erect a memorial to e class of 1917.

istorical
eview
ounded

A new periodical, *The Hispanic American Historical Review,* ade its initial appearance at the University in February of this year. The chief object of the Review is the publication of articles discussing the early history of the Pacific Coast and of Spanish America. embers of the faculty of the University are serving on the ard of editors. The Review was founded largely through the unificence of Mr. Juan C. Cebrian of San Francisco, who has nated to the University several thousand volumes of Spanish orks.

oheny
esearch
oundation

In January of 1918 the Board of Regents entered into an greement with the Doheny Research Foundation, just then established by Mr. Edward J. Doheny, to investigate and report upon political and economic conditions in Mexico. Under the terms of the agreement certain search associates of the Foundation were appointed, the Uni-ersity extending its hearty coöperation and the free use of its brary facilities, offices, etc. Under the direction of an executive mmittee, on which were representatives of the University, the oheny Research Foundation has compiled valuable data relating present day conditions in Mexico and the historical reasons for em. A large part of the work was done in connection with the ancroft Library collection of the University.

Many notable lectures by individuals of national reputation in their particular fields have been given during the past ye

Eminent Scholars Lecture

Dr. Francis G. Allinson, Professor of Classic Philology in Brown University, held the Sath Classical Professorship for the first half of the ye 1917–18. In the spring half-year Dr. William Kelly Prenti Professor of Greek in Princeton University, occupied the sa chair. The lectures on the Hitchcock Foundation were deliver at the time of the Semicentenary by Dr. Irving Fisher, Profess of Political Economy at Yale University. The Mills Profess ship was held during the year 1917–18 by Dr. Ralph Bart Perry, Professor of Philosophy at Harvard University. Duri the first half of the year 1918–19 Dr. John Dewey, Professor Philosophy at Columbia University, came to the University Mills Professor.

Strengthen School of Education

An immediate and pressing need of the University is a fu developed School of Education. This means the provision of sub-department corresponding to each of the ma activities of public education, so that training m be provided for leadership in every branch of struction. I shall recommend to the Regents the appropriati for next year of $15,000 to be used in extending the work of t school. We are negotiating with the Oakland School Depa- ment for the rebuilding and extension of the University Hi School, which serves as chief laboratory of our teachers' traini work.

Higher Salaries for Faculty

The continued lagging of the salary list behind the increas cost of living makes necessary a decisive incre of salaries for the teaching force. This incre must not average less than ten per cent. No p fession is more thoroughly underpaid than our univers teachers. Upon nothing is the University more definitely pendent than upon the character and spirit of its teaching.

Need for New Buildings Is Keenly Felt

It is evident that with the burdens of the w still upon us we cannot this year ask the State new buildings, but nevertheless we need them, a with the outlook toward the future we must state the need. Fi of all we need a Students' Union, a building which shall ho e Associated Students' Store, rooms for student societies, ebating unions, restaurants, reading rooms, clubs, student govrnment rooms, etc. Secondly, we need an armory as a center or the military department, the housing of munitions, and the ssemblage for drill. Thirdly, we must have an auditorium apable of sheltering six thousand people and equipped with an rgan. If we cannot have a place wherein we can bring together ur student body, or at least a fair majority thereof, we shall oon lose one chief reliance for our system of student self-overnment. Our University Meetings are an essential factor f our characteristic student life. Now that our student attendnce is attaining to seven thousand, we confront a crisis in our ffairs under which we can no longer reach the ears of one-half ur students at once. The last need and the chiefest is housing or our students; the demand is insistent; the time is ripe. Just hat this housing shall be special investigation must determine. t must be adjusted to our peculiar needs and must not merely mitate the traditional ''dormitories'' of the East. We ought ot to begin building until we have before us a plan of the hole, and before we have a building plan we must have a inancial plan. We have not yet found any way of making a ormitory more than half self-supporting, except by some unorthy type of construction.

But all this and much else I leave to my successor with my lessing.

Respectfully submitted,

BENJ. IDE WHEELER,

President.

SUMMARY OF REPORTS

SUBMITTED TO THE PRESIDENT BY DEPARTMENTS*

Agriculture.—The annual report of the College of Agriculture, publish separately as usual, contains the customary summary of the routine acti- ties of the Experiment Station. In addition, at the request of the Direct, Professor W. Mulford has made an analysis of the research work with t view of possible revision and coördination to the end that the larger pro- lems of the Experiment Station may be attacked more comprehensiv and effectively. The report also contains a notable paper by Profes E. J. Wickson, Dean and Director Emeritus, on the investigations of t Department of Agriculture during its first half century of work.

Because of its responsibilities for extension work, the staff of t department has given much of its time and energies to war activities synopsis of which has been published in the July issue of the *Univers Chronicle.* Several members of the staff have assisted the State La Settlement Board, of which Dr. Elwood Mead is chairman, in locati and organizing for settlement about 6400 acres of land at Durham, Bu County.

The acceptance by the University of the responsibilities for traini teachers of agriculture under the Smith-Hughes law has placed new e- phasis upon the work of the Division of Agricultural Education, althou the preparation of teachers of agriculture for secondary schools has be a definite part of the work of this department since 1909. The war cris has made the number of men pursuing the five-year course of study fo teacher's certificate almost negligible. To meet this situation, there ha been started at the University Farm at Davis special courses in techni agricultural subjects primarily intended for men over thirty years of a who have had satisfactory teaching experience in the sciences underlyi agriculture. These courses began in April and continued through t summer.

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* For report of Departments of Anatomy, Biochemistry and Phar- cology, Medicine, Neurology and Psychiatry, Obstetrics and Gynecolo, Pathology and Bacteriology, Pediatrics, Physiology, and Surgery, the report of the Medical School beginning on page 153.

The policy of the department has been to give courses of instruction any group of persons whenever the need has definitely been indicated, oviding the facilities and the time of the staff permit. In pursuance of s policy, many groups of citizens have been brought together for riods varying from a few days to six weeks. Including the usual rmers' Short Courses, about forty such groups have come together ring the year for periods varying from a few days to six weeks.

One of the many outside activities of the department is the educa- nal work at the state prison at San Quentin under the auspices of the vision of Agricultural Education. At the meetings of the San Quentin ricultural Club on the first and fourth Saturday of each month the gular class work is conducted. On the second Saturday, members of e club give talks on some agricultural subject or a film is shown, while the third Saturday a speaker is supplied from this department. The aver- e attendance at the eleven lectures given by members of the department ff during the year is estimated at 570. The club membership is 350.

further illustrative of the scope of outside activities, a member of e Division of Agricultural Education, in addition to his regular resident truction, has given during the year 178 lectures, with an aggregate endance of 46,050.

The California State Dairy Cow Competition which began in Novem- r, 1916, was concluded in February of the present year. Ten months', yearly, records were completed by 609 cows, owned by thirty-four ferent breeders. Prizes valued at $7500 were donated by public-spirited izens. The competition has had a splendid influence in stimulating tter methods of feeding and handling dairy cattle.

The allotment of funds by the United States Department of Agriculture the interest of its food production campaign has made possible an rease in the staff personnel of the Department of Agriculture at the iversity. The additions to the staff, brought about by this and other tors, were 50 during the year. On June 1, 1918, there were 214 ap- intees connected with the department, 20 of whom were on war leave, residents of Berkeley, 39 at the University Farm at Davis, 12 at the trus Experiment Station at Riverside, and 60 in the field service or con- cted with minor stations.

The number of high school teachers of agriculture co-operatively ployed as district club leaders has increased from 15 to 34. The enroll- nt in agriculture clubs has increased from 1879 boys in 1917 to 2389 boys d girls in 1918, not including many volunteers enrolled for planting mmer crops.

The organization of county farm bureaus was started by the depart- nt on July 1, 1913. Organization has been perfected in fifteen counties the outbreak of the war and in eighteen counties on June 30, 1917.

Under normal conditions, it was expected that farm bureaus would organized in every county in the state by 1922. The war made it nec sary, however, to organize in a few months a system which had been l out as the work of the next five years. There are now 470 farm bure centers in thirty-six counties, with a paid-up membership of approximat 20,000 persons. Eighty-five per cent of the number of farmers given the census of 1910 are enlisted in the farm bureau movement. At le one member of the University Department of Agriculture is present ea month at the meetings held in each farm bureau center.

Since April, 1917, eleven women demonstrators have been added to t three specialists employed for demonstration work among women on t farms. They have devoted their efforts to the furtherance of four ma projects: the conservation of food by canning and drying; the use substitutes for such foods as are needed by the American army and na and by the Allies; the increasing of the number of home gardens; t further development of poultry raising. During the year, 1342 dem strations and 551 lectures were attended by 66,029 persons.

Military training was instituted at the beginning of the first semes as a part of the curriculum for students at the University Farm. Th companies, composed of 217 officers and men, received military traini during the first semester; during the second semester, two companies c posed of 142 officers and men, were trained.

The year has been characterized by the dedication of Hilgard Hall Berkeley on October 13 and the dedication at Riverside on March 27 the Citrus Laboratories. These additions to the facilities of the depa ment represent an expenditure of half a million dollars. Hilgard H provides classrooms, laboratories, and offices for the divisions of Agr omy, Citriculture, Forestry, Genetics, Pomology, Soil Technology, a Viticulture. The work of the Citrus Experiment Station, including vestigations in plant breeding, plant pathology, and entomology, is carr on in the newly constructed laboratories at Riverside.

An exchange of assistant professors of entomology was effected w Cornell University, whereby Professor E. C. Van Dyke of the Univers of California went to Cornell for the year and Professor J. C. Bradley Cornell came to Berkeley. An exchange of assistant professors of ani husbandry was effected with the Kansas State College of Agricult Professor J. C. Thompson of this University going to Kansas and P fessor C. M. Vestal coming to Berkeley.

Sixteen bulletins and thirty-five circulars have been published dur the year, in addition to the annual report of the Director and thirty-ei war emergency leaflets. A total of 1,903,000 copies of the various pu cations have been printed, and the number of persons on the mailing of the department has increased from 35,000 to 36,500.

Scientific and technical papers contributed to journals by members of staff of the department have been commented upon favorably by se engaged in research work throughout the country. A noteworthy lication of the year is a textbook by Professor E. B. Babcock and fessor R. E. Clausen on "Genetics in Relation to Agriculture."

BULLETINS

l. 281. Control of the Pocket Gopher in California. E. R. de Ong.
l. 282. Trials with California Silage Crops for Dairy Cows. F. W. Woll and E. C. Voorhies.
l. 283. The Olive Insects of California. E. O. Essig.
l. 284. Irrigation of Alfalfa in Imperial Valley. Walter E. Packard.
l. 285. The Milch Goat in California. E. C. Voorhies.
l. 286. Commercial Fertilizers. P. L. Hibbard.
l. 287. Vinegar from Waste Fruits. W. V. Cruess.
l. 288. Potash from Tule and the Fertilizer Value of Certain Marsh Plants. P. L. Hibbard.
l. 289. Improvements in Methods of Pickling Olives. F. T. Bioletti and W. V. Cruess.
l. 290. The June Drop of Washington Navel Oranges. J. Eliot Coit and R. W. Hodgson.
l. 291. The Common Honey Bee as an Agent in Prune Pollination. A. H. Hendrickson.
l. 292. Green Manure Crops in southern California. W. M. Mertz.
l. 293. Sweet Sorghums for Forage. B. A. Madson.
l. 294. Bean Culture in California. G. W. Hendry.
  With appendix on
    Composition of California Varieties of Beans. M. E. Jaffa and F. W. Albro.
    Insect and Other Enemies of Beans. E. R. de Ong.
l. 295. Fire Protection for Grain Fields. Woodbridge Metcalf.
l. 296. Topping and Pinching Vines. F. T. Bioletti and F. C. H. Flossfeder.

CIRCULARS

166. The County Farm Bureau. B. H. Crocheron.
167. Feeding Stuffs of Minor Importance. F. W. Woll.
168. Spraying for the Control of Wild Morning-Glory within the Fog Belt. Geo. P. Gray.
169. The 1918 Grain Crop. Thomas Forsyth Hunt.
170. Fertilizing California Soils for the 1918 Crop. C. B. Lipman.
171. The Fertilization of Citrus. W. P. Kelley.
172. Wheat Culture. J. W. Gilmore.
173. The Construction of the Wood-Hoop Silo. J. B. Davidson and J. E. Stiles.
174. Farm Drainage Methods. Walter W. Weir.
175. Progress Report on the Production and Distribution of Milk. Elwood Mead.
176. Hog Cholera Prevention and the Serum Treatment. P. T. Petersen.
177. Grain Sorghum Seed. E. B. Babcock.
178. The Packing of Apples in California. Warren P. Tufts.
179. Factors of Importance in Producing Milk of Low Bacterial Count. C. L. Roadhouse.

Cir. 180. Selecting Corn Seed. E. B. Babcock.
Cir. 181. Control of the California Ground Squirrel. Joseph Dixon.
Cir. 182. Extending the Area of Irrigated Wheat in California for 1918. Frank Ada
Cir. 183. Infectious Abortion in Cows. F. M. Hayes.
Cir. 184. A Flock of Sheep on the Farm. R. F. Miller.
Cir. 185. Beekeeping for the Fruit-Grower and Small Rancher, or Amateur. Geo. Coleman.
Cir. 186. Poultry on the Farm. J. E. Dougherty.
Cir. 187. Utilizing the Sorghums. Thomas Forsyth Hunt.
Cir. 188. Lambing Sheds. R. F. Miller and G. E. Fermery.
Cir. 189. Winter Forage Crops. P. B. Kennedy.
Cir. 190. Agricultural Clubs in California. B. H. Crocheron.
Cir. 191. Pruning the Seedless Grapes. F. T. Bioletti.
Cir. 192. Cotton in the San Joaquin Valley. J. W. Gilmore.
Cir. 193. A Study of Farm Labor in California. R. L. Adams and T. R. Kelley.
Cir. 194. Intercropping of Young Irrigated Orchards. R. S. Vaile.
Cir. 195. Revised Compatibility Chart of Insecticides and Fungicides. Geo. P. Gra
Cir. 196. Dairy Calves for Veal. Gordon H. True and Clarence V. Castle.
Cir. 197. Suggestions for Increasing Egg Production in a Time of High Feed Pri J. E. Dougherty.
Cir. 198. Syrup from Sweet Sorghums. W. V. Cruess.
Cir. 199. Onion Culture in California. Stanley S. Rogers.
Cir. 200. Growing the Fall or Second Crop of Potatoes in California. Stanley Rogers.

WAR EMERGENCY LEAFLETS

Adams, R. L. The Farm Labor Situation in California; Twenty-five Ways to Cons Labor.
Bioletti, F. T. Drying Muscat Raisins; Home-made Vinegar (with W. V. Crue Home Pickling of Ripe Olives.
Condit, I. J. The Drying of Figs.
Coöperation. Selecting Improved Bean Seed.
Cruess. W. V. Candied Fruits; Candying Fruits, Making Fruit Vinegar and Sal Vegetables; Canning Fruit and Vegetables; Drying Fruit and Vegetables; Drying of Potatoes, Sweet Potatoes, Pumpkin, Squash and Cabbage; Drying of Tomatoes, Green Peas and Corn; Fruit Juices and Jellies; Steri tion of Meat in Jars; Tomato Paste.
Haring, C. M. Facts about Anthrax; Precautions against Poisoning by Johnson G and Other Sorghums.
Hauser, E. J. Poultry Raising.
Jaffa, M. E. Cooking the Tepary Bean; Food Standards.
Mackie, W. W. Improving Rice Seed; Prevention of Stinking Smut of Wheat Covered Smut of Barley.
Nuenmacher, F. W. My War Garden.
de Ong, E. R. The Fumigation of Stored Grain, Dried Fruits and Other Prod Insect and Other Enemies of Beans.
Rogers, S. S. City Winter Gardening; My War Garden, a Patriotic and Econ Duty; Spinach Growing in California; Vegetable Planting and Harve Calendar for Central California.
Schmidt, R. Drying Prunes; Drying Sulphured Fruits; The Home Evaporator; S Dipping Outfit for Prunes and Other Fruits; Trays for Drying Fruit.
Shaw, C. F. The Utilization of Idle Lands for Wheat.
Vestal, C. M. Helpful Hints to Hog Raisers.
Webber, H. J. The Importance of Using Good Cotton Seed.

Anthropology.—The University's Museum of Anthropology has enter- ned 21,015 visitors during the past year. Associate Curator E. W. ford has given 134 lectures in the museum and eight lectures have been en by others. Persons attending the lectures included 11,424 children m 348 classes in the public schools.

The museum has been enriched by a number of gifts from Mrs. Phoebe Hearst, including four paintings of Hopi subjects by C. O. Borg. The gest single task in the routine work of the museum was the cataloguing about three thousand Peruvian specimens.

Research work in the field has been conducted along three lines: the te-wide survey of kinship systems, which has been completed; the study the religious practices of Central Californian tribes; and intensive earch work among Cahuilla Indians of the Colorado Desert.

Dr. Robert H. Lowie of the American Museum of Natural History held position of associate professor through an exchange agreement ereby Professor A. L. Kroeber was to carry on Dr. Lowie's work in w York during the second half-year. Both Professor Kroeber and fessor T. T. Waterman were absent from the museum during the second ester and much of their work was carried on by Dr. Lowie. Professor terman left the University to go to the University of Washington as sociate Professor of Anthropology.

Architecture.—Many students in this school who otherwise would have urned to the University have enlisted for active war service; many o were enrolled in the department for the first semester left the Uni- sity during the year to go into some branch of war service, or to take the study of naval engineering and other subjects that would fit them war work.

The registered attendance at exhibitions held in the gallery of the ool was 5484. The exhibitions, for the most part, were of the work of dents.

The department again urges the necessity for a fireproof room for the artment library; undergraduate scholarships and fellowships; prizes distinguished work; and a chair of landscape architecture, either as art of, or in closest affiliation with the School of Architecture.

Astronomy.—This department has carried on successfully war activities ugurated during the preceding year. Members of the staff have con- ed with the teaching of Navigation and Nautical Astronomy in the pping Board's Navigation School. The department has taken an active t in the organization and conduct of courses preparatory to naval vice, both in the University and elsewhere under the auspices of the iversity Extension Division.

The increasing demand for admittance to elementary observatory work by lower division students must ultimately be met by provision f additional laboratory space. The department, for the present, has had curtail its research activities on account of important war work. T most necessary orbit computations, however, were continued through t voluntary efforts of Mr. H. M. Jeffers.

Every member of the staff of the past two years, including ten p fessors, instructors and assistants, has been or is now in the governme service. In February, Professor R. T. Crawford received a commissi as major in the Signal Corps, and was assigned as Senior Instructor at t Air Service Balloon School at Fort Omaha, Nebraska.

During the second half-year, Astronomers H. D. Curtis and W. Wright of the staff of the Lick Observatory were engaged in instructi in the Berkeley Astronomical Department.

Botany.*—Problems of an economic nature arising out of war c ditions have been the subject of important investigations by the staff this department during the past year. Professor H. M. Hall and Profes T. H. Goodspeed have devoted a considerable portion of their time investigating the possibility of obtaining a supply of rubber from nat plants. A continuance of the investigations has been recommended the Pacific Coast Research Conference. An outline of the course of investigations has been presented to the State Council of Defense, a $700 appropriated by the State Council has been expended in explorat and in the assembling of materials for testing. The department has b called upon for determinations and for advice by a larger number persons than ever before, as the result of the widespread interest making a more extensive use of native plants for food and for other p poses. In this emergency war work, the Herbarium has demonstrated usefulness most thoroughly, supplying investigators with important origi information. The identifications made for correspondents and for visit during the year reached a total of 2213.

The donations, which to a considerable extent come through members the department, equaled only 1724 during the year, as compared with 6 in 1916. The Herbarium has received in exchange 3776 sheets of pla from the National Herbarium at Washington, D. C., the Herbarium of University of Wyoming, A. A. Heller of Oroville, California, and from Herbarium of Stanford University. The chief loans of Herbarium sp mens for research purposes have been made to the Field Columb Museum at Chicago, the University of Illinois, the University of Min sota, the National Museum and the Gray Herbarium of Harvard U versity.

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* A list of gifts presented to the Department of Botany, its gar museum and herbarium will be found on pp. 199–201.

dditional steel cases are needed for use in the Herbarium. Speci- s sufficient to fill 30,000 sheets are ready for mounting, but it seems ise to proceed until cases are provided.

he number of rooms available for use by the department is still in- uate and the number of assistants is too small, in spite of the fact the enrollment of students, particularly of students in graduate and nced courses, has decreased. The small building known as the nistry Annex is to be occupied by the department, and this added e will provide fair accommodations for work in cryptogamic botany, table physiology, and cytology. The Botany Building, which houses ratories for the study of phaenogamic, economic and elementary ny, should be remodeled. The construction of a building for use by Department of Botany, however, would more properly coördinate the rent branches of work in the department, now carried on in three rent buildings.

t is recommended that the Botanical Garden be removed from its tion on the campus to a more isolated site, such as has been selected trawberry Cañon. This would obviate the tampering with labels and imens now experienced.

eltic.—The Department of Celtic has continued its work successfully few changes in the policies of the preceding year. A valuable isition to the University Library was made in the purchase of com- sets of the ''Archaeologia Cambrensis'' and the ''Transactions of mrodorion Society'' of Wales.

hemistry.—The war has struck the dominant note in the work of this rtment during the past year. Largely as a result of members going various branches of the government war service, the staff was reduced forty-five to twenty-seven. In spite of this handicap, however, the rtment assisted in the solution of problems of a scientific nature for National and State Councils of Defense. And while a few of the nced courses that have usually been given in alternate years, and have been open to but few students, have been given up, all of the important courses were carried on.

Iost cordial relations have been established with the various chemical facturers of the state. The department has assisted in solving their lems and has given them information and advice. They, in turn, have rocated by extending to the department the freedom of their fac- s, by supplying materials and samples and by co-operating in every ble way. These activities of the department are held to be extremely rtant and it is urged that they be extended throughout the state.

eceipts from laboratory fees show that attendance was not far below normal. They were as follows: 1915–16, $16,825; 1916–17, $17,129; 1917–1 $16,801. Many of the students taking chemistry courses are enrolled i the Departments of Engineering and Agriculture and in the College o Medicine, and are pursuing courses of study which will fit them for wa work.

The completion of Gilman Hall has accorded the department ampl space for advanced work. Much equipment, however, is still needed. Th sum set aside from the residue of the building fund was far less than th amount asked for, and, inasmuch as the salary budget provides for a appropriation which is $10,000 less than that of last year, it is urged tha the whole or a part of this saving be made available for equipment.

The Department of Chemistry suffered the loss of a loyal and earne worker through the death of Professor Edward Booth.

Civil Engineering.—During the past year, students and faculty mem bers of the Department of Civil Engineering have been engaged in variou branches of war work. Mr. V. Arntzen and other members of the depar ment, in co-operation with the Department of Astronomy, have designe and perfected a system of range finders for Captain Dinsmore Alte C. A. R. C. Apparatus for use in the aviation schools at San Diego and a Kelly Field, Texas, has been constructed with the assistance of the Depar ment of Psychology. Professor C. Derleth, Jr., Mr. T. C. Wiskocil an Mr. J. R. Shields have conducted 250 separate tests of aeroplane materia in the testing laboratories, under the supervision of government inspector Charles Gilman Hyde, Professor of Sanitary Engineering, served as member of the Engineering Commission appointed to design sanitar works for Camp Fremont, and later became a Major in the Army Sanitar Corps. Mr. Edwin D. Hayward, an instructor in the department, is Firs Lieutenant in the Army Sanitary Corps, and Adolphus James Edd Assistant Professor of Civil Engineering, is Captain in the Coast Artiller Corps.

Beginning with the academic year 1918–19, the College of Civil E gineering will administer a four-year curriculum in Military Engineerin leading to the degree of Bachelor of Science in Civil Engineering. Th curriculum is designed to prepare students for admission to the Unite States Army Corps of Engineers.

The department recommends that professorships in architectur engineering and surveying be established; that the property of the Su mer School of Surveying on which the lease expires in April, 1919, purchased immediately; and that rooms to meet the necessary expansio of some of the sub-departments be provided.

The Department of Engineering of the State Board of Health co tinues to maintain offices and laboratories in the Civil Engineering Buil

The bureau is growing so rapidly, however, that lack of sufficient r space probably will cause the State Board of Health staff to seek er quarters at the end of the academic year of 1918–19. The bureau, rticularly through its laboratories adjoining our sanitary student oratories, is a source of help and inspiration to the Department of il Engineering, and its removal would constitute a loss to the depart-nt.

Drawing and Art.—The number of students enrolled in courses in art s been equal that of the preceding year; the work has been carried on th few changes in policy. In courses in engineering drawing intended inly for students of engineering and architecture, there has been a rked decrease in enrollment. The effect has been to increase the iciency of instruction, which has been largely individual.

Economics.—The war has reduced somewhat the student registration courses in this department. Many members of the faculty have been anted leaves of absence to enter the service of the government, and e department has made temporary appointments in order to continue its ual courses of instruction.

Finance, labor, foreign exchange, and problems confronting the railads in wartime have been the subjects upon which special emphasis has en placed. Courses in marketing, economic theory, and in accounting ve been added to the curriculum.

An Ordnance School for men enlisted in the United States army was ganized and administered most successfully by Professor H. R. Hatfield, ofessor S. Daggett, and other members of the department. A Red Cross aining School for Home Service was also conducted.

Members of the staff who have been granted leaves of absence to gage in war activities include Professor L. Hutchinson, Head of the port Division of the War Trade Board; Professor C. E. Brooks, Actuary d Adviser to the United States Bureau of War Risk Insurance during e first semester, and Professor J. B. Peixotto, Executive Chairman of e Child Welfare Department of the Woman's Committee of the Council National Defense. Professor Hatfield, Professor I. B. Cross, and Mr. R. Macaulay and Mr. E. A. Kincaid assisted the government in in-stigations connected with the ship-building programme. Professor C. Plehn attended war finance meetings in Atlanta and Chicago and rote a number of papers on the war.

Members of the department have continued their work of research d publication.

The new members on the staff were Mr. Herbert Shuey, Mr. William eslie, Mr. Victor Montgomery, Dr. Horace B. Drury of Ohio State Uni-ersity, and Dr. Solomon Blum of Colorado College.

Education.—The past year has been one of substantial progress in s department. The number of students in higher degree classes has bn greater than ever before, a fact which obviously points to the need r more courses of the seminar type. The total of enrollments fell sligly below that of the preceding year, and the proportion of men studes declined.

The higher professional degree established two years ago is becomg the objective of an increasing number of ambitious teachers. Upon e recommendation of the School of Education, the Senate has required ll candidates for teachers' certificates to furnish satisfactory evidence f good health and of an adequate command of oral English. The incree in the number of candidates has made it necessary to provide for i-creased opportunities for practice teaching. During the year the numr of cadet teachers has equaled 165.

The department welcomes the prospect of an enlarged staff because of e broader opportunity that will be offered trained men and women, throh educational leadership, for grappling effectively with problems arisg out of this period of stress. In order to accelerate the development f the School of Education into a professional school fully recognized s such, a faculty of experts in some field of pure scholarship and in e theory and art of education is necessary. Each department whose subt calls for representation in the School of Education should have on s staff at least one member specially trained for such representation.

The School of Education should be provided with a special budget r publications in order to promote the educational interests of the ste through circulars, bibliographies, bulletins, pamphlets and suitae monographs.

English.—The most significant change brought by the past year s the adoption of a plan for dealing in a more positive and constructe way with students whose English is defective. This plan stipulates tt Subject A beginning with August 1919 "shall be prescribed as an entrae examination for all entrants to the colleges at Berkeley," and provis instruction in certin specified courses for those who pass Subject A wh grades 1, 2, or 3 respectively. Students who receive grade 4 or 5 in S-ject A are conditioned in the subject, and will not be granted the Jur Certificate until they have passed the examination. A course in Engh composition is offered for them also, calling for one period of class i-struction per week, together with written exercises and conferences, uil they have passed Subject A. This course carries no credit. For studes who enter with advanced standing Subject A is a requirement for jur standing. This examination will be administered under the direction f

Committee on Subject A, which, beginning with August, 1918, will cise the duties at present exercised by the Committee on Students' lish.

rofessor C. M. Gayley, Head of the Department and Dean of the lties, has been in the service of the Liberty Loan Committee of the lfth Federal Reserve District, the Pacific Coast Division of the rican Red Cross, the Y. M. C. A., the State Council of Defense, and r patriotic organizations. He has delivered many addresses and ten numerous articles on war subjects. Professor W. M. Hart, Pro- or B. P. Kurtz, Professor T. F. Sanford, Professor H. E. Cory, Dr. G. Brodeur, and Mr. G. R. MacMinn have contributed articles and vered addresses towards the winning of the war.

During the past year, seventy-eight students have been reported, for ious deficiencies in English, to the University Committee on Students' lish. This number shows a decrease of forty-two from the number orted during the previous year, and implies either a falling-off in the peration of other departments or a marked improvement in the lish expression of University students. That the latter is the case the artment has not yet sufficient proof.

In order to distinguish more carefully the work for the teachers' mmendation from that for the higher degrees, the courses in English lology have been entirely rearranged and considerably altered in racter. The fundamental courses have been at once simplified and adened in scope with a view to furnishing appropriate training and e comprehensive information for teachers. The other courses have n segregated, placed in alternate groups, and more strictly specialized, h a view to affording fuller opportunity for graduate work of a her order.

The members of the department conducted, during the fall semester, eries of public readings in English literature, in pursuance of the icy which achieved successful results during the preceding year.

The problem of providing sufficient instruction for freshmen students grown increasingly acute. There is still a need for more sections and re instructors.

Geography.—To meet the demands of the war emergency, this depart- nt has instituted a course in the geography of Europe and an optional rse for students in the Naval Reserve.

The enrollment in Elementary Meteorology has decreased following the ision that the subject is of too specialized a nature to count as a scribed science course. The enrollment in other elementary courses shown a slight increase. The attendance in courses in the upper ision has decreased.

Geology and Mineralogy.—Under the auspices of the State Counci f Defense, this department has instituted an investigation of the depo s of manganese and chrome ore throughout California, for the purpose f ascertaining the possible supply of these ores and of stimulating t r production for war use. Professor G. D. Louderback, who is in charg f the investigation, has effected co-operative arrangements with the Uni d States Bureau of Mines and the United States Geological Survey. E . Davis, instructor in the department, and a group of graduate stud s have been assisting Professor Louderback. Field work was vigoro y prosecuted during the vacation period. In addition to benefits of n economic nature arising out of the investigation, much has been lear d regarding the genesis of these ores that is of great interest from a pu y scientific point of view.

Six geological memoirs, embodying the results of investigations car d on by members of the staff and by graduate students, have been p pared, five of which have been published.

The space in Bacon Hall continues to be inadequate for the work f the department, and it has been necessary to give lectures in geol y in another building, remote from the illustrative material necessary r proper instruction.

German.—The outstanding feature of the past year in the work of e Department of German has been the sharp decline in enrollment du o the war with Germany. Compared with the preceding year, 1916–17, e enrollment fell off, in the first semester, 27 per cent, and, in the sec d semester, 44 per cent. The enrollment was as follows: 1916–17, f t semester, 1228, second semester, 1178; 1917–18, first semester, 896; sec d semester, 670. The highest previous enrollment was that of 1913–14, w n the figures were, respectively, 1312 and 1244.

Greek.—Professor E. B. Clapp, for twenty-five years Professor f Greek Language and Literature at the University of California, s retired from active teaching because of failing health and has b n named Professor Emeritus. Dr. George Miller Calhoun has been appoin d Assistant Professor of Greek, and in 1918–19 the department will e further strengthened by the appointment of Dr. Roger M. Jones s instructor.

With the increase in the size of classes for beginners in Greek, it s become necessary to add more sections. The work of these classes s been rendered far more effective through the use of Professor James C. Allen's "First Year of Greek," published in 1917. The department s definitely adopted the policy of providing instruction in as many ph s of Greek civilization as possible for students who do not take up e study of the Greek language.

History.—The establishment of a course in Naval History given by rofessor Henry Morse Stephens and Dr. K. C. Leebrick, was the direct tgrowth of the war and the consequent demand for naval instruction. he course is based upon instruction given at the United States Naval cademy at Annapolis and has been approved by the authorities there. course on the History of the Military Organization of the United tates was given during the first semester by Captain Curtis O'Sullivan.

In the work of research and publication the record of the department xceeds that of previous years. Important additions have been made to e "Publications in History," which are now in the tenth volume. hrough the labor of Professor H. E. Bolton and Dr. C. W. Hackett, rofessor Gittinger's book, "The Formation of the State of Oklahoma," Vol. VII) has been issued and has been most favorably received. Dr. avidson's "History of the Northwest Company" (Vol. VIII), Dr. Cun- ingham's "Audiencia in the Spanish Colonies" (Vol. IX) are in page roof, and Mr. Albright's "Federal Explorations for Transcontinental ailroads" is in galley proof. Awaiting publication are Dr. Hackett's The Pueblo Revolt in New Mexico, 1680," "The Manila Galleon," the ork of Dr. Schurz, Dr. Coy's "The Historical Development of the Hum- oldt Bay Region," Dr. Neff's "The Mormon Migration to Utah," and everal lesser papers. Without the efficient aid of Dr. Hackett, this large mount of editorial work would have been impossible; his going to the niversity of New Mexico as Professor of History is a serious loss to the epartment.

Other publications by members of the department include a two- olume work published by Professor Bolton, entitled "Father Kino's istorical Memoir of the Southwest," a rare and important manuscript hich he discovered in the archives of Mexico, and Professor L. J. aetow's "Guide to the Study of Medieval History," a work which has eceived the highest commendation from scholars in this special field and hich represents many years of labor. For the excellence of typography nd careful proof-reading, this book, the product of the University of alifornia Press, has been commented upon in many reviews. The second oubat prize was awarded to Professor H. I. Priestley for his recent olume on José de Galvez. Volumes by Professor C. E. Chapman await- g publication are on the documentary material preserved at Seville, pain, on California history and on the history of Spain.

Mention should be made of the service rendered by the Native Sons f the Golden West in maintaining fellowships for research in California istory, and of the generosity of Senator James D. Phelan in contributing unds necessary to print the Proceedings of the First Vigilance Com- ittee of San Francisco, which will be issued next year. Excellent work as also been done by the California Historical Survey Commission, of

which Professor Bolton is an active member and Dr. Owen C. Coy Exec
tive Secretary. It is proposed that, during the coming year, the Commi
sion suspend its regular work and devote itself to the maintenance
the war record of the State of California.

Professor Leebrick's course in the United States School of Vocation
Training will form the basis of the general course on war aims to
given next year for members of the Students' Army Training Corps.

Professor J. J. Van Nostrand of the University of Pennsylvania h
been appointed to succeed Professor R. F. Scholz, who goes to the Univ
sity of Washington.

Home Economics.—While the war has brought many new and i
portant problems to both divisions of this department, the regular
organized work has not been interfered with. Ten war courses were co
ducted by the Division of Household Art, including courses on clothin
house furnishing and management, textiles, and teaching methods. Oppo
tunity was offered for research work.

During the special term in the summer of 1917, war courses we
given on the renovation and remodelling of garments for civilian reli
the making of hospital garments and comfort bags, and the preparati
of surgical dressings.

Co-operation with the Women's Bureau of the American Red Cross
San Francisco was brought about through tests and analyses made by t
textile class of samples of wool yarn and wool substitutes submitted
manufacturers to the Women's Bureau for knitting.

The work of the Household Science Division is divided into thr
fields: the development of research in nutrition, food preparation a
food analysis; the training of teachers of household science; and t
training of dietitians for hospitals and other institutions. In additi
to this work the division has co-operated with numerous institutions a
agencies.

In the Summer Session of 1917, a course in dietetics for nurses pla
ning to take up public health work was instituted. In the second semest
a course was offered in food and dietetics, for the training of Universi
women who plan to enter nurses' training schools. These courses will
repeated next year. Three Food Administration courses sent from Was
ington were given in their entirety to 760 students. Five dietary surve
were carried out under the direction of the division at the request of t
Home Economics Bureau of the United States Department of Agricultu
while to meet the increasing demands for assistance in solving hou
keeping problems, a series of war emergency bulletins has been issu
in mimeographed form. Six classes of twenty members each have be
certificated by the Red Cross after instruction given in this divisio
Further co-operative work along these lines should be carried on.

Co-operation with the University Hospital is necessary for the stand- ization of the training and duties of the hospital dietitian. To this ., the establishment of an internship of one year for graduates of this ision is proposed, with the title of Graduate Dietitian to be given upon completion.

Hygiene.—During the past year a combined academic and nursing cur- lum for women was outlined by the University and approved by the eau of Registration of Nurses of the State Board of Health. A dent following the curriculum may enter the second year of the iversity of California Hospital Training School for Nurses at the end her third year of academic residence. After two years in the nursing ool she may receive her Bachelor of Science degree from the Univer- and at the same time be eligible to appear for the state examination registration as a nurse. The effect of the new curriculum will be to rease the vocational opportunities for students in public health sub- ts. Health departments have long been willing to accept women duates as laboratory workers, but have preferred graduate nurses for lth visitors. The department is now in a position to offer this choice students at the end of the third year, either to continue with the oratory phase of public health, or to spend two years in the training ool for nurses and then return for a graduate course in public health sing.

The appointment of Mr. Robert N. Hoyt, State Health Officer for the tral Coast District, as Lecturer in Public Health has provided a long- ght-for opportunity for the addition to the course in health surveys of ctical field work under a health official. Under Mr. Hoyt's direction, dents have made health surveys of Alameda, Richmond, San Leandro, ward, San Mateo, Palo Alto, and Los Gatos. Class excursions were made to San Jose, Palo Alto, and Camp Fremont.

The course in public health laboratory work has been put on a year is, one semester being devoted to communicable diseases and one to examination of air, water, milk, disinfectants, etc.

Irrigation.—The Department of Irrigation has continued to develop ruction in irrigation engineering; agricultural use of water; irrigation itutions, water codes and economics; drainage, especially of water- zed, irrigated lands; and operation and maintenance of irrigation sys- s. The courses are planned primarily to meet the needs of students he Colleges of Civil Engineering and Agriculture. Four undergraduate rses and one graduate course are primarily for students in the College ivil Engineering; four undergraduate courses are primarily for students the College of Agriculture, and one undergraduate and two graduate courses are offered in common to students in both colleges. In additi students in both colleges may elect their thesis course in the Departm of Irrigation. The student in the College of Agriculture will make u of his knowledge in irrigation practice and the agricultural use of wa as a supplement to his agricultural education and as an essential fac in farming operations in the arid regions. Instruction in irrigation wh is prescribed in the irrigation course of the College of Civil Engineer forms an important part of the student's course and is very likely to the foundation for his future profession. Close co-operation between College of Civil Engineering and the Department of Irrigation has alw existed and has resulted in the building up of a very effective course irrigation.

The department offers more complete instruction in irrigation tha given in any other university or college; this is generally recognized students, who come to the University of California from foreign count and from other states. During the past year students in the departm included one from Peru, one from Siam, and one from South Africa.

Owing to war conditions, the department has answered by correspo ence an increased number of requests for assistance in the developm and use of water for irrigation purposes on frams.

A textbook on the ‘‘Operation and Maintenance of Irrigation S tems,’’ by Professor S. T. Harding, was published during the year, has been favorably commented upon in book reviews appearing i number of engineering journals. Professor Harding's book, with th volumes on ‘‘Irrigation Practice and Engineering’’ by Professor B. Etcheverry of the department, and a volume on the ‘‘Elements of Wes Water Laws’’ by A. E. Chandler, President of the State Water Co mission and a former member of the department, form the basis instruction in the various phases of irrigation.

Jurisprudence.—The enrollment in the School of Jurisprudence decreased through the withdrawal of students entering war service. hundred and twenty-eight students have gone directly from Boalt into the service of the government. Of the 153 graduates of the sch fifty-three are in the national service.

Members of the faculty who are engaged in war work include fessor A. M. Kidd, with the Red Cross in France; Dr. J. U. Calkins, Lieutenant in the American Expeditionary Force in France; Mr. H. Phleger, Ensign, U. S. N., assigned to the U.S.S. Beal; Mr. M. W. D zensky, Second Lieutenant in the 12th Infantry, Camp Fremont; Mr Wahrhaftig, in the office of Brigadier General Hugh S. Johnson, Was ton, D.C.; Professor A. T. Wright, Counsel for the United States Ship Board and the United States Shipping Board Emergency Fleet Cor n, San Francisco; Professor M. C. Lynch, Assistant Agent of the Federal serve Bank, San Francisco; Mr. F. P. Griffiths, Section Chief for Cali- nia of the Free Government Schools in Navigation.

A distinguished record in the national service has been achieved by gh S. Johnson, one of the graduates of the School of Jurisprudence. . Johnson, a West Point graduate, was detailed in 1914 by the War partment to take a course in law at the University of California. He eived the degree of Juris Doctor in 1916. He has since risen from the ık of First Lieutenant to that of Brigadier General, and has been pointed Director of the Purchases and Supply Branch of the National vision of Purchase, Storage and Traffic, which has to do with the con- idation and co-ordination of the work of the five supply bureaus of the ır Department in the matter of requirements, purchase and production.

Latin.—The decrease in the number of students in the Department of tin was slight. The total enrollment was 961, as compared with a total rollment in the academic year of 1916–17 of 1012. Six hundred and ty-two students were enrolled in the classes in the lower division, 2 in the classes in the upper division and 37 in the graduate courses.

Chief in importance among the works by members of the staff pub- hed during the year is the edition of Lucretius' ''De Rerum Natura'' Professor William A. Merrill. This work appeared twelve years after ofessor Merrill's annotated edition. It is unquestionably one of the st important contributions to the study of Lucretius that has appeared this country.

Two members of the department were appointed associate deans of e Summer Session: Professor Leon J. Richardson, to serve in Berkeley, d Professor M. E. Deutsch, in Los Angeles. Profesor Richardson has en serving as Manager of the Military Information Office established the University. Three other members of the department have been sociated with him in the work.

Mathematics.—The demand for advanced courses in mathematics dur- the Summer Session has grown steadily during the past year. The partment urges a special appropriation to meet the demand and phasizes the need of supplying properly qualified teachers of mathe- tics in the California high schools.

The decrease in enrollment during the past year, compared with the eceding year, was 11 per cent during the first semester and 16⅔ per nt during the second semester. The decrease was especially marked in e upper and graduate divisions. In spite of this fact, however, eight dents were graduated with the Bachelor of Arts degree with honors mathematics, four qualified for the Master of Arts degree and three for the degree of Doctor of Philosophy. The number of advanced cour was slightly reduced, but there was an increase in the number of dividual conferences with advanced students.

There were several changes in the staff of the department. Profes L. E. Dickson of the University of Chicago was appointed visiting p fessor for the first half-year. Professor D. N. Lehmer taught during summer quarter at the University of Chicago, and Professor E. R. Hedr of the University of Missouri gave some interesting courses dur the Summer Session at this University. Dr. H. N. Wright resigned instructorship in the department to become Professor of Mathemat and Dean of Whittier College. Dr. Pauline Sperry, formerly Assist Professor at Smith College, was appointed instructor for the year.

Mechanical and Electrical Engineering.—The plans of the Departm of Mechanical and Electrical Engineering during the past year have necessity been altered to meet the requirements of the war. In the up division courses, less than half the number of students registered in academic year of 1916–17 were enrolled. In all of the prescribed cour in the lower division, however, the student enrollment equalled or ceeded that of previous years.

At the close of commencement exercises in May, 1917, the departm instituted the University of California United States Shipping Bo School. Only two of ten similar shipping board schools in the coun have surpassed the record of this school in the number of students enrol and in the number of trained men who have qualified as steamb inspectors and entered the government Merchant Marine Service.

Throughout the year, courses have been conducted in automobile gineering, electrical engineering, naval preparation, marine engineer and naval architecture.

Instruction in the department has been closely allied wtih the work the School of Military Aeronautics at the University. Professor B. Woods is President of the Academic Board of the Aeronautical Sch and Professor B. F. Raber has directed the work in the power division the school.

Four members of the staff of the department are commissioned offic in the Army and one holds a commission as Lieutenant in the Navy.

The installation of equipment and the enlargement of the mechani and power engineering laboratories during the past two years have b of great value in giving the engineering courses demanded by war requ ments, and have made possible investigation and research work direc related to important motive power problems. The department, howev is in need of laboratory facilities for use in marine engineering naval architecture. The magnitude of the shipping and shipbuild interests in California make it imperative that this need be met.

Military Science and Tactics.—New courses for the instruction of embers of the unit of the Reserve Officers' Training Corps established the University of California in April, 1917, have been instituted by iis department during the past year, in accordance with the require-ents of the War Department. No changes in the organization of the niversity Cadets have been deemed necessary. Captain L. M. Welch, . S. A. retired, Professor of Military Science and Tactics, reports that e work of both officers and cadets has been very satisfactory.

Mining and Metallurgy.—The enrollment in the College of Mining iowed a decided increase over recent years and there is every reason to pect larger classes in the future. To improve facilities for instruction, tensive changes have been made in remodelling and equipping the boratories. These changes in a large measure were made possible rough the generosity of Mrs. Phoebe A. Hearst. A new balance room id a metallurgical laboratory have thus been provided, in addition to ioroughly equipped laboratories for fire and wet assaying, for instruc-on in the mechanics of mining, and for the study of problems of drain-re and pumping in connection with mines. In the smelting and draft oms much necessary equipment has been installed and interesting hibits have been arranged. Apparatus and devices supplied during the ist year by Mr. F. W. Bradley, the Joshua Hendy Iron Works, and the andard Oil Company are of value in their several fields.

A new laboratory for petroleum engineering, well equipped with proper oparatus for the study of problems incident to the fuel and oil industry, ive been established. The Department of Petroleum Engineering is tracting not only students of the College of Mining but of other colleges well.

In October, 1917, the rescue car of the Federal Bureau of Mines visited erkeley and the upper classmen in the College of Mining were given struction in the use of oxygen breathing apparatus, and in mine scue and first-aid work. The Lawson Adit, now advanced to a total 400 feet of underground openings, permitted a duplication of con-tions attendant upon mine fires and gaseous workings, besides affording ceptional opportunities for experience in other phases of actual mining ork. Senior students collaborated in government work through the erkeley Experiment Station of the United States Bureau of Mines, which is continued to solve important metallurgical problems relating to nergency metals and war work.

It is gratifying to note the entrance of advanced students and alumni the College of Mining into the Graduate School. For the first time in e history of the college, the degrees of Metallurgical Engineer and ining Engineer were conferred on graduate students.

Work in the College of Mining and Metallurgy is well organized nov and the equipment in the laboratories of mining and petroleum enginee ing is excellent. The remodelling of the metallurgical plant, and th installing of more up-to-date equipment, are highly desirable, and it hoped that this may be accomplished during the year.

Music.—This department has endeavored to give special attention training prospective teachers of music in methods, selection and use teaching material, general musicianship and history of music and mus teaching. The effort has been made to co-ordinate these subjects wi their complementary courses in the Department of Education. The d partment notes with pleasure the success of its graduates in the teachir field. The aims and methods of the high schools and those of this depar ment are being steadily brought in more close co-ordination.

During the past year 278 students have been enrolled in courses the lower division and fifty-nine in courses in the upper division. O hundred and five students were enrolled in extension courses and thirt nine in correspondence courses.

An illustrated course on the history of music was instituted and t public was invited to attend. The attendance was unexpectedly larg Lectures in special fields of interest in the study of music have be offered the general public, as well as the University public, by visitir musicians. Several noteworthy concerts have been given, through t co-operation of Choragus Paul Steindorff and the Musical and Dramat Committee of the University.

Gifts to the department include a viola da gamba, from Mr. Pa Steindorff, and a large collection of chamber music, from the Mess Mundwyler.

The most pressing needs of the department are for a larger staff a for a more modern building.

Oriental Languages and Literature.—The interest in courses throwi light upon affairs in the Orient is on the increase at the University California, and the need for ample facilities for such courses has be evinced during the past year in the work of this department. Go progress has been made by the department in the instruction of Japan and Chinese students. With Mr. Kiang in charge, a series of lectures subjects pertaining to the Orient has been given in San Francisco, und the direction of the Extension Division of the University.

Palaeontology.—The war has brought about a decrease in stude enrollment in this department. It is doubtful if there will be any gr uate students this year. Professor J. C. Merriam's time has been larg ken up by his duties in connection with the State and National Councils Defense, while Dr. B. L. Clark as acting chairman of the sub-com- ttee for the study of the distribution of mussels and their importance a substitute for meat, has given much of his time to investigation.

Notwithstanding these activities, a great deal of valuable research rk has been accomplished by members of the staff and by students rking under their direction, and several publications setting forth the sults are either now in print or on the press.

During May and June, Dr. Clark, with a party of students, made a ip through the coast ranges of southern California to study the various cene sections. Important results were obtained and will be published ter.

Philosophy.—The enrollment of students, both in the elementary and vanced courses, continues steadily to increase. It is now necessary to ve most of the courses in Philosophy outside of the Philosophy Build- g. The resulting disadvantage of no longer having a building adequate the needs of the department has been offset by the gain in having asses meet near the library and the center of the humanistic depart- ents of the University.

The various courses have dealt freely with the fundamental issues of e and conduct which the war has presented, and with the problems of cial and political reconstruction after the war. Professor Ralph Barton erry of Harvard University, Mills Lecturer in Philosophy for the second lf-year, gave a course on ‘‘The Philosophical Background of the War.’’

Valuable contributions to the federal government of otherwise un- tainable apparatus for psychological investigations at the Signal Corps viation School, Rockwell Field, and at Camp Lewis, have been made om the psychological laboratory. Members of the laboratory staff and udents devoted several weeks to experiments and computations in con- ection with the tests for the Air Service devised by Professor G. M. atton. Rooms and apparatus were provided for use by the Personnel nit detailed to make tests in examining cadets in the School of Military eronautics. The course in General Psychology was revised to meet the eeds of students in the Students' Army Training Corps unit. At the ose of the academic year, C. I. Lewis, Assistant Professor of Philosophy, listed in the Coast Artillery Corps, later receiving a commission.

The psychological clinics maintained by the department, in conjunc- on with the Department of Pediatrics of the Medical School, continue to erform a useful service to the community. Members of the department e acting as consulting psychologists to the San Francisco Board of ealth in its work in the schools, and to the State Board of Health at e Preston School of Industry. There is a pressing need for more space for laboratory work in psychology. A larger lecture hall has been nee for several years. Provision should be made for instruction in educatio and applied psychology and for a more extended development of e work in clinical psychology.

Physical Education for Men.—The activities of this department we organized four years ago on what is now known nationally as a ''w basis.'' The aim has been to assist men in attaining a minimum t standard of physical proficiency. The effectiveness of the course of tra ing has been given official recognition, the University of California havg been cited by the United States Commissioner of Education for adopt a system of physical education similar to that approved by the W Department for all colleges and universities. The department during e past year has had charge of the department of organized sports for e School of Military Aeronautics.

Intramural sports have been promoted systematically and an efft has been made to interest the leaders in student affairs in student p motion of such sports. The facilities of the University, however, e entirely inadequate for such general student participation, a conditn which will be aggravated this year by increased military activity on e campus. More ground area, properly surfaced, should be provided a at least ten handball courts should be built.

The testing of the physical capability of students, as a guide r arranging their work in this department, has led to the awarding of e University gold, silver, and bronze medals for ''all around athle championship.'' These medals were awarded to the three men attain the highest records in health, general ability, ability in personal comb, ability in swimming, etc.

The department is engaged in research work of various kinds. Pr lems under investigation include proper classification on a basis f efficiency tests; photographic recording and measuring of physical defec; correction of flatfoot and other physical defects through exercise; velopment of new forms of physical training games and exercises f military importance; reconstruction methods and equipment for woun soldiers.

Plans for various military schools offering specialized training at e University indicate that a heavy demand will be made upon the acco modations for bathing and dressing in Harmon Gymnasium. It is urg that alterations in the gymnasium be made in the immediate future.

Physical Education for Women.—Since the passage of Senate Bill N 559 in 1917 making physical education compulsory in all schools in e state, there has been an urgent demand for well-trained teachers in t ld. The Department of Physical Education for Women, therefore, has rected its efforts particularly to the organization of upper division ork and the training of teachers. Students graduated from the Univer- ty with a teacher's certificate in physical education and an allied science e at once employed in educational work in positions of responsibility. he fact that five years' work is required for the certificate has raised rofessional standards in the state. The further development of this rriculum is imperative in providing teachers with the best training and uipment.

The Orthopedic Clinic at the Medical School, which is supervised by e Department of Physical Education for Women, affords students in ajor courses the use of a laboratory for practical experience in cor- ctive gymnastics. A similar opportunity is afforded through clinical ork and practice teaching in the public schools.

The work prescribed by the department is aimed to meet the peculiar eeds of the individual student and, with this end in view, is carefully raded. Physical examinations are given each student upon entrance, and t the end of the second and fourth semesters. Special sections are rranged for those in need of lighter work or corrective gymnastics; and ere are two special classes, or clinics, for students who are not able to ccomplish satisfactory work in the regular classes. A rest room with two ots has been established for students whose physical condition makes rgent a rest period in place of active work in the gymnasium.

During the past year, an excellent system of reference for use by this epartment and the Infirmary has been perfected, through which cases f illness, weakness or disability are followed in common by both depart- ents to insure proper treatment being administered.

In accordance with the policy of past years, student athletic activities ave been coached by members of the staff of the department, and the anagement of sports has remained in the hands of the students. The epartment has provided a coach for tennis. It is hoped that this year member of the staff will be available to coach fencing, for this is the nly sport that has not been coached by a department member.

With the increasing enrollment, a new fireproof gymnasium with dequate offices, examining, lecture and rest rooms, and with an athletic eld near-by, has become a pressing need.

Physics.—The decrease during the past year in the number of students n the engineering, upper division and graduate courses in this depart- ent was largely offset by an increased enrollment of pre-medical stu- ents and of students electing courses in physics. The crowding of the aboratories resulting from an increase in the number of pre-medical tudents has made alterations in South Hall necessary.

Dr. W. P. Roop and Dr. L. F. Jones, both members of the staff of t department, have entered the naval and military service, respective Dr. A. S. King, Director of the Mount Wilson Solar Observatory physi laboratory, served as lecturer in physics during the second term.

One mechanician in the department was occupied almost entirely government work for the School of Military Aeronautics.

Professor Frederick Slate retired at the end of the year after twen seven years of distinguished service as administrator and teacher.

Political Science.—The war has affected both the staff personnel a the student enrollment in this department. Professor David P. Barro was granted a commission as major from the first Reserve Officers' Tra ing Camp at the San Francisco Presidio, and is now on duty in Sibe Dr. J. R. Douglas left the University after the first semester to enter government service in Washington, D.C. He is at present connected w the Baking Division of the United States Food Administration. Mr. J. Thomas and Dr. Morris Lavine, teaching fellows, entered the aviat service and the Navy, respectively.

Courses given by the department which have a direct bearing on war included a course, during the second semester, on ‘‘Problems Reconstruction After the War,’’ under the direction of Dr. Willi MacDonald, formerly Professor of American History at Brown Univ sity; a course on ‘‘The Government of Germany and Prussia’’ and course on ‘‘French Political Institutions,’’ by Dr. L. Ehrlich, and course on international law by Professor E. Elliott. Seminars were c ducted for the study of some of the most important questions affect political science that have been raised by the war. Professor Elli Dr. Ehrlich, and Dr. MacDonald offered ten public lectures on war top delivered thirty-five lectures and addresses throughout the state on simi subjects and published numerous articles on the war.

Public Speaking.—Half of the former staff of the Department Public Speaking are in the United States military service; the remain members, in addition to carrying on their regular academic duties, contributing to the national service in various ways. The department assisted in the training and supervision of Four-Minute Men and speakers bringing home to the citizens of the state the necessity of f conservation. Actors taking part in plays for the benefit of the Red C and the Belgium Relief Fund have been trained by members of department. Readings and recitals, often under the auspices of local co mittees in charge of entertainments for soldiers, have constituted a p of the war work of both members of the staff and students.

Romanic Languages.—This department is devoting much of its energy
the development of a system whereby all courses in the upper division
ll be conducted, in so far as is practicable, in the foreign idiom. The
stem provides for such instruction in courses in the lower division as
ll make for greater facility in speaking the romanic languages. The
sses have, as usual, been large in size.

There have been a number of changes in the staff of the department.
ofessor Leslie M. Turner enlisted in the national service; his place was
ken temporarily by Mr. L. Barnier. Miss Caroline B. Singleton
turned to the department after a year of study at Columbia University.
rofessor Ramón Jaén has been appointed Assistant Professor of Spanish.
r. Malbone Watson Graham has taken up the duties of Dr. Robert S.
ose. Mr. O. Ronchi, a graduate of the University of Bologna, has suc-
eded Mr. Emilio Goggio, Instructor in Italian, who accepted an appoint-
ent at the University of Washington.

Mr. Juan C. Cebrian of San Francisco has continued to enrich the
niversity Library through gifts of numerous volumes of valuable books
f great interest to this department.

Sanskrit.—The Department of Sanskrit has continued in its effort to
read some knowledge of the masterpieces of Ancient Indian thought
y lectures both without and within the University.

Semitic Languages.—Thirty students were enrolled in lecture courses,
nd nine in language courses, in this department during the year. Two
raduate students trained by the department hold fellowships at Columbia
niversity. A paper by one of them, Mr. Louis I. Newman, is included
n the volume, ''Studies in Biblical Parallelism'' by Professor W. Popper
nd Mr. Newman, one of the publications issued in observance of the
emicentenary of the University of California.

Slavic Languages.—As a result of the appointment of three assistants
n the Department of Slavic Lanuages—Mr. A. S. Kaun, Assistant in
Russian Languages; Mr. M. Krunich, Assistant in Serbo-Croatian Lan-
guages; and Miss Z. Buben, Assistant in Bohemian Languages—the depart-
ment has been able during the past year to give a greater variety of
courses than heretofore. Instruction was given in the Russian, Polish,
Bohemian, Serbo-Croatian and Old Bulgarian languages, and lecture
courses were given on Russian novelists, Slavic literature, and on the
political institutions of Russia.

One hundred and forty-four students were enrolled during the year, fifty-one of whom were enrolled in language courses. The total enrollment during the preceding year was ninety-four.

Zoology.*—During the past year, 1374 students were enrolled in tl department, an increase of 149 over the preceding year.

The department has co-operated with the State Board of Health numerous examinations for intestinal parasites, particularly the hoo worm, and has assisted in the attempt to rid certain areas of the sta of this parasite. Important work has been carried on in conjuncti with investigations of the State Council of Defense.

Researches in comparative anatomy, embryology, protozoology, par sitology, and animal behavior have been carried on.

Dr. A. L. Barrows and Dr. C. A. Kofoid, members of the staff of tl department, have entered the military service. Dr. Kofoid is in char of work in parasitology in the military cantonments in the south. M Ellis Michael of the Scripps Institution of Biological Research, duri the second semester, gave courses formerly given by Professor W. Ritter. Mr. C. V. Taylor, acting instructor in the absence of Dr. Kofoi has been conducting the course on the biological examination of wat

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* A list of gifts to the department of zoology will be found on p. 20

ALUMNI SECRETARY

Berkeley, July 1, 1918.

the President of the University,

Sir: I have the honor to submit the report of the Secretary the California Alumni Association for the year ending ne 30, 1918.

The past year has been one of unusual opportunity as well one of unusual difficulty for the Alumni Association. The ar has altered the work of the Association as it has the work every individual and organization. It has completely banished rtain phases of our work and created entirely new phases; it s taken away many of our members and has given us new es. But there have been opportunities and there is promise many more, should we be able to seize them.

The programme of the Council for the past year has been to romote the value of the Association in meeting military de-ands, to carry on the regular, sane and steady life and routine f the Association in spite of war-time difficulties, and to aid e government through the Military Bureau. This programme as been executed so far as the capacity of the staff and the nds have permitted.

From June to December of the past year the Alumni Associa-on underwent a series of changes which considerably inter-pted the normal activities of the Association, as well as the ormal routine of the Secretary's office. Harvey Roney, secre-ry from September, 1915, to May, 1917, was given a leave of bsence to attend the first officers' training camp at the Presidio, fter which he obtained a commission and was assigned to duty

at Camp Lewis. Entire charge of the secretary's work w
then undertaken by Miss Florence Nadler, the Assistant Secr
tary. During the summer the *Fortnightly* was published
Monroe E. Deutsch, '02, who had kindly volunteered to tal
charge. J. J. McLellan, '10, was appointed Acting Secreta
from September to December, 1917, but soon found his duti
in San Francisco too arduous and was forced to resign. Wi
the Assistant Secretary's departure for Washington to unde
take government work, the personnel of the office had undergo
an entire change. Only since December has the Association be
able to settle down to something like its normal life, and on
since December has the *Fortnightly* had a permanent editor.

The annual football banquet took place this year, with
attendance of 160. It was successful, though not attended
largely as in previous years.

On the success of the semicentenary observance was center
the efforts of the Council. The Council felt that the occasio
of the 50th anniversary of the University should be made a hap
and profitable one for every alumnus, as indeed it proved to b
The value to each alumnus who came through hearing the le
tures, attending the conferences, and through the reassociatio
with old friends and classmates, can hardly be estimated. Seve
hundred and two alumni registered at the alumni headquarte
during Semicentenary Week. One hundred and fifty-one a
tended the Charter Day luncheon. The Charter Day banque
which has come to be considered a fixed feature of the Universit
Charter Day celebration, was given this year as the final eve
of the Semicentenary. The attendance numbered 650 this ye
as compared with 387 in 1917. Twenty-two classes held reunio
luncheons and dinners during the Semicentenary Week.

The war again has made inroads on our membership list
There are 3550 members of the Alumni Association and 360
subscribers, as compared with 3328 members in 1917 and 385
subscribers, making an increase of 222 members and a decrea
of 257 subscribers. While friends and relatives have in a nun
ber of cases been carrying the Association accounts of the me
in the service, we have been asked to cancel the accounts of man

ers for the duration of the war. The places of these men in Association must be filled by new members. The value of Association in war work has never been more apparent and Association needs support as never before. The secretary's e is beginning an active and continuous campaign for new mbers.

The Military Bureau, established by the Alumni Association ew weeks after the declaration of war, has grown to many times original capacity. There is now on file in the office informa- n concerning approximately 4000 applicants. The Bureau s received at least 250 calls and has made 378 nominations for cific positions during the months of February, March and ril. Three thousand four hundred and four telephone calls ve been sent in and out of the office; 22,506 pieces of mail have en handled and at least 5216 people have come to the office ring the last three months.

Until December of 1917 the entire cost of the Bureau was rne by the Alumni Office and the entire work, with the ex- ption of that carried on by Director L. J. Richardson, was ndled by members of the Alumni Office. In December, how- er, an appropriation for the support of the Bureau was made the Board of Regents. The work of the Alumni Office is now closely interwoven with the work of the Military Bureau that is hard to tell where one ends and the other begins. The scope the work bears promise of becoming more extensive than ever, the war progresses.

The Employment Bureau has been temporarily merged into e Military Bureau, since war calls have taken precedence over l others and few men are listed for other than government sitions. After the war, the machinery of the Military Bureau, d the vast amount of information it has on hand, will be util- ed in the establishment of an after-the-war employment bureau r men returning to civilian life.

Another work undertaken by the Alumni Association this ar is the compilation of the Honor Roll and the War Record. here is on file in the office, available to everyone, information ncerning University of California men in the service. A great effort is made to keep this information accurate and up to da a task which is well nigh impossible without the assistance f friends and relatives of men in the service in keeping us formed. The Alumni Association is anxious and eager to tabul and keep available information regarding all University of Ca fornia men in the service. The Association takes a personal terest and a personal pride in the progress of each man.

As to future plans, there is much of value that can be do To further the interests of the government by putting every p sible effort into the Military Bureau; to maintain an accur history of the men in service, as a permanent record; to p forth a *Fortnightly* that will be read with eagerness by our so in the service; to keep to the reasonable and normal path; a to gain strength and influence by gaining strength in numbers—these are the plans of the Alumni Council.

Respectfully submitted,

Homer Havermale,
Secretary.

APPOINTMENT SECRETARY

Berkeley, July 1, 1918.

the President of the University,

Sir: I have the honor to submit herewith my report, covering period from July 1, 1917, to July 1, 1918:

mber of visitors	9,012
mber of candidates for positions on file	1,834
mber of calls for teachers	1,746
s of recommendations sent out	5,048
tters sent out	17,050

Respectfully submitted,

May L. Cheney,

Appointment Secretary.

CALIFORNIA SCHOOL OF FINE ARTS

San Francisco, July 1, 1918.

To the President of the University,

Sir: I have the honor to present the following report of t California School of Fine Arts (San Francisco Institute of Ar for the academic year 1917–18.

The addition of several important courses to the curricul last year, and the developing and strengthening of all depa ments of the School, have resulted this year in a decided increa in attendance, as well as a marked improvement in the gener results obtained from all classes. This has been manifest especially in the better coördination of various branches of t school work, leading to a closer harmony in the presentation subjects given in different departments.

The aim of the School, which has been enthusiastically mai tained, is directed towards the development of highest art ideal a knowledge of what art is and the principles which govern i expression, combined with the practical training that will equ students with the necessary technique to give these ideals e pression and make these principles operative in their work. T enrollment during the past year has been the largest in the h tory of the School.

The interest shown in the Night School classes in Drawi and Painting has been such that it was decided to continue t night school work without interruption through the vacati periods.

An interesting and instructive course of lectures was giv during the second term on Art History and Art Appreciati

Dr. Frances Melburn Green of the University Extension vision.

At the close of the year 14 yearly scholarships were awarded the faculty for excellent work, including three given in the nual competition open to high school students of California.

Two members of the faculty resigned to enter the army ser- ce and another to go east, necessitating changes in the teaching aff of the School.

The Summer Session now in progress has a large enrollment om California and from adjacent states.

Respectfully submitted,

LEE F. RANDOLPH,

Director.

COLLEGE OF DENTISTRY

San Francisco, July 1, 1918.

To the President of the University,

Sir: I have the honor to present the following report of tl Dental School for the year 1917–18.

War conditions have brought about changes which are nece sary in maintaining and improving the course of instructio The faculty, staff and students have earnestly coöperated i adapting themselves to these changes.

On October 6, 1917, Congress amended the Selective Servi Act by placing dental students in the same class as medic students, allowing them to complete their course of study und certain conditions by enlisting in the Medical Enlisted Reser Corps. This recognition of dentistry as a part of medic science, and the creation of a Dental Corps in the United Stat Army on practically the same basis as the Medical Corps, ar regarded as signifying universal approbation of the progres dentistry has made in recent years.

Through enlistment, the College of Dentistry lost the follo ing members of its staff:

John A. Marshall, Assistant Professor of Biochemistry an Dental Pathology—Captain, Ordnance Department (on wa leave).

George R. Hubbell, Instructor in Radiography—Captai Medical Reserve Corps (resigned).

Malcolm Goddard, Instructor in Comparative Odontology— Dental Surgeon, Base Hospital No. 30, France (on war leave)

Clark R. Giles, Instructor in Anesthesia—Dental Surgeon,
e Hospital No. 30, France (on war leave).

Dr. Stanley L. Dod, Instructor in Dental Pathology—Officers'
ining Camp, Presidio (resigned).

Homer L. Sams, Instructor in Extraction—Dental Surgeon,
A. (resigned).

Fred Wolfsohn, Assistant in Orthodontia—Dental Surgeon.
N. (on war leave).

The Dean of the College of Dentistry served as Preliminary
miner for dental surgeons enlisting in the Dental Reserve
ps, and as Director of the Preparedness League of American
itists for Northern California, which has rendered gratuitous
ice to all drafted men and recruits to the extent of many
usands of operations. Professor E. H. Mauk has served on
lical Advisory Board No. 5, and the students of the College
e assisted in examining the mouths and teeth of all drafted
n in San Francisco.

On August 22, 1917, the San Francisco Chapter of the
erican Red Cross gave $500 for the purchase of dental sup-
s to replace missing teeth for drafted men and recruits and
assist soldiers and sailors in getting dental work done. As
esult, 108 men received treatment. The work included 39
dges, 27 plates, 27 single crowns, 79 fillings, 231 extractions,
prophylactic cases and 72 miscellaneous operations. This
rk, I believe, is one of the most creditable features of the
r's activities.

Early in June, 1918, the department offered a condensed
urse of instruction in War Dental Surgery to the members of
Dental Reserve Corps on inactive duty. The instruction was
en by Doctors Edith Williams, Leo Eloesser, K. F. Meyer,
D. Millikin, F. E. Rohmer, Major C. M. Taylor, and by the
lowing members of the staff: Doctors J. G. Sharp, A. C. Rulof-
n, G. Y. Rusk, C. L. Hoag, H. B. Carey, E. H. Mauk, M. T.
odes, F. V. Simonton, H. T. Moore, A. E. Scott, and members
the clinical staff. The course consisted of 30 lectures and 25
urs of clinical instruction, with examinations. Forty-eight
mbers of the Corps were in attendance.

Research activities for the year have been carried on by Rh F. Horel, Research Fellow in Dental Pathology, on the Carl-Dakin solution as an agent in the treatment of alveolar absces and pyorrhoea. A report covering a part of her investigatis was submitted to the California State Dental Association at s annual meeting. This Association is contributing $300 annuy to the University for dental research. Earle H. Mathis, B., '07, D.D.S., '18, has carried on investigations with plaster cpounds in the hope of finding an investing material more suitle and less costly than the materials now available. The expiments have met with encouraging results.

Competent dental service for the civil population, and prticularly for children, must be given full consideration by e University and the people of the state. The press, the ay and navy, public health authorities and members of the medl profession, realizing the value of a clean mouth and sound ten, are urging the people to accept the importance of mouth hygie. A large number of civil dentists are engaged in military serve or are subject to call. The limited enrollment authorized by e government and the fact that 85 or 90 per cent of the graduas of the College have been called to military duty, curtails appciably the service that can be rendered to the civil populatn, and some solution of the problem must be considered. A divisn of labor, with women employed as properly trained dental gienists, is generally conceded to be the best plan for renderg a service that will prevent dental disorders and their sequee. The adoption of this plan is particularly advisable in the pulie schools, where children, when they first enroll, can be propey trained in mouth hygiene. Legislation to this end should e looked forward to.

The School has endeavored to secure the appointment f dental interns on the staffs of the various hospitals. With e approval of the Surgeon General, and at the request of e superintendents of these hospitals, appointees have been recomended for the University of California Infirmary at Berkey, the University of California Hospital, the Children's Hospil, Lane Hosiptal, the San Francisco Hospital, Mt. Zion Hospil, Baby Hospital, Oakland, and the hospitals at the Juvenile urt, San Quentin and Repressa.

The type of equipment recently installed by the Regents in new Infirmary is unsurpassed in any dental school in the ntry and is highly endorsed by dental educators, and in classification of dental colleges by the Dental Educational uncil, approved by the Surgeon General, the College of ntistry of the University of California is given a Class A rat- g. Conditions governing the enrollment of students and the tus of the younger members of the teaching staff for the next ar, however, are such that no accurate forecast of the work of 18–19 can be made. The department will make every effort serve the nation and the state during this crisis.

Respectfully submitted,

GUY S. MILLBERRY,

Dean.

EXAMINER OF SCHOOLS

BERKELEY, July 1, 1918.

To the President of the University,

SIR: As Examiner of Schools, I have the honor to subm herewith my report for the year 1917–18.

The activities of the Examiner, as in recent years, have bee in the main such as may be summarized under the followin headings: First, personal work in the field with the school second, general oversight and direction of the work of the Un versity Visitors; third, as Chairman of the Committee o Schools, a general responsibility for the various activities an the policy of this committee in its relation to the schools; fourt correspondence with school officers, teachers and others relati to educational matters; fifth, a statistical study of the schola ship records made in the University by graduates of the seco dary schools who enter as freshmen; sixth, miscellaneous activ ties. A brief discussion of the work of the Examiner under eac heading follows.

First.—In personally visiting and examining schools, th Examiner has spent, as usual, the second half of the universit year, from January to June. In this time he has personall visited and inspected schools in all parts of the state, spend ing at least one day in each school. This year several school situated in remote parts of the state and never before seen by representative of the University have been visited and helpe towards improved equipment and better standardization gen erally. These remote communities show themselves especiall appreciative of the assistance and suggestions for their improve

m nt offered by the Examiner. Recent years have brought a
m rked growth in equipment and teaching force on the part of
tl smaller and more remote high schools. There is very gen-
e lly an attitude on the part of these communities to make
tl ir schools not only responsive to their local needs, but also
to such needs as will contribute to the general education of their
y th along higher and broader lines. To this end they are
f nd very willing to add to their teaching forces, improve their
e uipment and buildings, increase salaries, and broaden the
c rses of study. Indeed one can say that the sense of responsi-
b ty on the part of the high school local communities generally
t oughout the state for the real welfare of the youth of the state
is keen and intelligent. Everywhere the Examiner—and the
s ne is true of the University Visitors—has been received with
c urtesy, and an attitude of willing coöperation has been mani-
f ted almost universally.

Second.—As in recent years, the University has endeavored,
t ough the assistance of the University Annual Visitors, to
c ne into personal relations with every secondary school and
j nior college in the state which has signified a desire for affilia-
t n with the University. Applications for such visits were
r eived this year from approximately 340 schools. Unfortun-
a ly, however, owing to the unusual conditions arising out of
t e war, it has been found impossible to visit each one of these
s hools during each of the past two years with the funds avail-
a le for this purpose. In the year 1916–17 nearly 50 schools
h d to be omitted from the University visiting list for this reason,
a d numerous complaints were the result. This year, with a view
relieving the situation, it was decided to make at a flat rate
war-time emergency charge to private schools to cover, in part
least, the cost of the University visit. In spite of this we have
d to omit this year, though partly for other reasons, as many
hools as were omitted the preceding year. The Committee on
hools agrees with the Examiner in considering this situation
fortunate. The schools make application for a visit in good
ith and in proper form, and the University promises to visit
em. It seems to us that the Committee should be enabled, as

far as finances are concerned at least, to see that every sch l is visited which makes application. The desirability of keep g up the annual visits is especially marked now, for, with the g eral upheaval due to the war, the regular work of the sch s has in many instances suffered seriously and the outlook now s that this disturbance will be still more pronounced in the c ing year. The University wishes to coöperate heartily with e schools in their efforts to meet the national emergency, but e need to do this intelligently.

In passing, it should be remarked, too, that the advent f the so-called ''junior college'' has added much both to the la r of the school visiting and likewise to the need for doing th. These schools, as such, are in the making; they crave the h p which the University can and should render them in their effo s to grow into recognized and standardized institutions. Dur g the past year we have cut the visits to these institutions far bel what we think would have been desirable.

Third.—The Committee on Schools not only has charge f the accrediting of schools, but is also responsible for adjust g the many problems that are continually coming up touching e relations between the schools and the University. The past y r has been for the Committee a very busy one. The Commit e has held regular meetings, twice each month, and has, it is lieved, made very definite progress towards a standardized pol y in the handling of these problems. In this connection, as Ch man, I wish to urge the desirability of keeping the membersh of the Committee not only broadly representative but conti ous throughout the years. Frequent changes in the person l of the Committee militate against the efficiency of the Co mittee's work.

Fourth.—Correspondence with the schools, boards, and oth organizations constantly assumes greater proportions, so that t now consumes a great deal of time and energy. The Examin r needs more regularly dependable clerical help in this connecti than it has heretofore been possible to afford through the plan f making this work an incident in the general clerical tasks of e President's Office.

ifth.—The statistical study of the records of the freshmen University, the results of which were for a number of years shed annually and distributed as a separte bulletin to the ls, has been greatly modified by the conditions arising out e war. Results, under these changed conditions, are no r exactly comparable with those reached in normal times. national matters resume their normal course these records e kept, but considered rather more incidental than formerly guides rather than as determining factors in the deciding s of schools.

ixth.—Under miscellaneous activities of the Examiner may cluded especially attendance upon meetings, addresses and rences on educational matters, and commencement ad- ses. These activities form an important part of the niner's work each year.

Respectfully submitted,

W. Scott Thomas,
Examiner of Schools.

UNIVERSITY EXTENSION DIVISION

BERKELEY, July 1, 19

To the President of the University,

SIR: I have the honor of presenting herewith the fifth an report of the University Extension. This branch of Univ service, under the direction of its Advisory Board, is bein organized. Here follow characteristic features of the new

(*a*) Up-to-date organization in the three main offices of Univ Extension, namely at Berkeley, San Francisco and Los Angeles, th being to adapt these offices to the business and managerial fun required by the character of Extension work.

(*b*) Extension centers are being established or about to be estab in a number of important cities, which, being situated some dis from the several plants of the University of California, are no sufficiently served. Examples are San Diego, Santa Barbara, F Sacramento, Red Bluff, and Eureka.

(*c*) Emphasis in Extension work is being placed on:

1. Instruction by classes.
2. Instruction by correspondence.
3. Instruction by lectures

(NOTE.—Other lines of Extension work, such as Visual Instru Public Discussion, and the like are made subordinate or auxillary t foregoing. A budget system is being devised to the end that the se departments of University Extension may receive financial supp proportion to their relative needs and importance.)

(*d*) Expert supervision. The aim is to have experts supervis correlate Extension instruction of all kinds in order that the tea may be of the best possible character. For example, a French class ducted by an instructor who is not a regular member of the Univ of California is subject to inspection by a member of the French D ment. Again, where several courses in the same subject are given are being so related as to form an organic progression.

) Putting forth every possible effort to meet the educational needs ople of the state who cannot regularly attend the University of ornia or some similar institution. Current needs are:

Training demobilized soldiers and sailors for the professions, occu- ns and industries of peace. In most cases this means completing or ementing training previously received.

Many individuals need educational help in order to meet new obliga- and new opportunities resulting from the war. Consider in this ection: Ship building, domestic trade and industry, foreign trade mercantile marine, army and navy, diplomatic and consular work, ge and conservation, reconstruction along social, political, medical engineering lines.

Miscellaneous needs. University Extension has been called upon and continue to be called upon to furnish instruction in subjects about idely diversified as the vocations and avocations represented in ornia.

Financial Report

The following tabulation shows the receipts and expenditures he University Extension from July 1, 1917, to June 30, 1918.

ipts:

tate appropriation	$35,000.00	
redit balance, 1916–17	1,644.36	
ees for instruction	61,329.32	
iscellaneous	12.37	
Total income		$97,986.05
enditures		91,361.23
Credit balance		$6,624.82

istributaon of Income and Expenditures Showing Receipts and Expenditures of Various Bureaus

(Exclusive of State appropriation)

Bureau	Income	Expenditure	Free Service
s	$34,603.82	$42,017.91	$7,414.09
respondence	9,872.48	12,087.68	2,215.20
ture	6,983.04	11,797.79	4,814.75
Angeles	7,806.35	13,668.12	5,861.77
lic Discussion	371.10	3,419.87	3,048.77
ual Instruction	1,692.53	8,369.86	6,677.33
	$61,329.32	$91,361.23	$30,031.91

The total expenditures of 1917–18 may be itemized under e following classification:

Instruction	$26,629.94
Office assistance	20,302.71
Salaries	12,399.72
Lecture honorariums	5,808.71
Travelling expenses	4,632.51
Printing	4,627.38
Postage	3,007.10
Laboratory equipment	2,035.39
Readers	1,861.02
Office equipment	2,062.83
Rentals	1,579.08
Refunds	1,317.56
Office supplies	1,299.32
Mimeographing	644.75
Machine rentals	528.50
Freight and cartage	502.36
Telephone	475.84
Grounds and buildings	298.35
Organizing	467.53
Collectors	151.36
Bureau of Public Discussion Championship Debate	244.19
Telegrams	61.93
Miscellaneous expenses	423.16
	$91,361.23

In view of past experience and of conditions now confront g us the minimum appropriation for University Extension whh should be requested of the next Legislature is $100,000. Mih more than that amount could be profitably expended. To ask ls would disparage the work. A larger appropriation than the sn named is usually made for University Extension in states le Wisconsin, where the population is smaller than in California al where there are no problems arising from proximity to an oce.

I believe that an examination of the work of Universv Extension will result in the conviction that $100,000 could it be more wisely expended for the state than for the purpose f promoting the education of its population through the varis forms of University Extension.

Respectfully submitted,

LEON J. RICHARDSON, Acting Direct

GRADUATE DIVISION

Berkeley, July 1, 1918.

he President of the University,

Sir: I have the honor of presenting my report on the Grad- Division for the academic year 1917–18.

raduate Council.—The new organization of the Graduate ncil, adopted during the academic year 1916–17, has now n in operation for nearly two years. It has met the expecta- s of the faculties concerned in coördinating the diverse luate interests of the University and maintaining the highest dards in its graduate activities.

egislation.—Among the more important actions of the duate Council approved by the Academic Senate are the sion of the requirements for the high school teacher's recom- dation, for the Master's Degree, and for the Degree of tor of Philosophy. The granting of the high school teacher's mmendation has been made subject to the passing of a sical examination and to satisfactory evidence of proper mand of English. For the Master's Degree a unit value has placed on the thesis, which may now be counted as from two our units of strictly graduate work.

The requirement for the Master's Degree was changed ac- lingly from 18 units to 20 units, including a thesis.

The minimum requirement in strictly graduate work was nged from six units, to eight units inclusive of a thesis, which be rated at from two to four units.

The distinction of seminar and research courses from other luate courses has been abolished, which permits departments

and instructors to conduct their graduate courses in accordar
with the requirements of the subject. The former requiremen
stipulating that four out of the six units in graduate work m
be in seminar or research courses, has accordingly been abolish

The procedure in candidacy for the Degree of Doctor
Philosophy and for meeting the ultimate requirements for t
degree has been entirely revised, so as to place a greater respon
bility upon the sub-committees in charge of the candidacies a
on the departments of the major and minor subjects.

Numerous other actions of the Graduate Council have bee
in general, purely of an administrative character.

Attendance.—The total registration of graduate students f
the last four successive years was 832, 1014, 1092, and 931, i
cluding 21, 23, 16, and 4, admitted to study in absence. The fa
ing off in registration, which these figures indicate, was not une
pected and was due to the war. Of the 811, 991, 1076, and 9
resident students, 59, 52, 55, and 75 either failed to file stud
cards or withdrew. The remaining 752, 939, 1021, 856 were d
tributed as follows:

PROFESSIONAL SCHOOLS AND COLLEGES—

	1914–15	1915–16	1916–17	1917-
Agriculture (all subdivisions)	43	75	63	34
Architecture	19	19	18	7
Chemistry (including students in other colleges with major subject chemistry)	39	44	43	32
Commerce (including students in other colleges with major subject economics)	46	54	65	41
Education (not including students in the School of Education with a first major in other subjects)	48	53	93	97
Engineering	17	15	13	5
Jurisprudence	65	95	88	47
Medicine (students who take the first or second year at Berkeley in graduate standing)	27	28	37	53
Naval Preparation	----	----	----	6
Total	304	383	420	322
Percentage	40.4	40.8	41.1	37.6

DERN AND ANCIENT LANGUAGES AND LITERATURES—	1914–15	1915–16	1916–17	1917–18
English	55	100	101	95
German	41	39	46	34
Greek	4	4	3	3
Latin	29	29	30	25
Oriental Languages	2	2	2	3
Romanic Languages	50	46	45	58
Semitic Languages	4	5	1	1
Slavic Languages	1	3	4	3
Total	186	228	232	222
Percentage	24.7	24.3	22.6	25.9
ATURAL AND ALLIED SCIENCES—				
Anatomy	4	2	4	3
Anthropology	1	6	5	6
Astronomy	8	8	7	3
Biochemistry (Physiological Chemistry 1915–16 and included under Physiology 1914–15)	....	5	7	3
Botany	16	12	18	20
Geography	3	4	4	1
Geology	2	8	10	8
Hygiene	6	7	6	7
Mathematics	30	23	40	29
Mineralogy	2	1	2	1
Palaeontology	7	3	3	3
Pathology and Bacteriology	2	8	3	10
Physics	16	25	24	11
Physiology	7	11	8	7
Public Health	....	3	7	6
Zoology	23	29	21	29
Total	127	155	169	147
Percentage	16.9	16.5	16.5	17.17
THER SUBJECTS—				
Household Art and Science	12	33	30	25
Drawing and Art	11	10	13	13
History	58	69	81	76
Music	1	5	3	3
Philosophy	24	27	31	26
Psychology		7	6	4
Physical Education	6	9	9	6
Political Science	23	13	16	10
Public Speaking	....	....	11	2
Total	135	173	200	165
Percentage	18.0	18.4	19.5	19.27

The percentage of women has steadily increased since 1913–1 as shown by the following figures:

	1913–14	1914–15	1915–16	1916–17	1917–18
Percentage	42.9	44.8	47.1	51.3	58.1

In addition to the registered students, a number of accepte candidates for higher degrees continued their studies under tl direction of the University during temporary absence. N figures are given for them this year because many of these prol ably merely maintained a formal connection with the Universit while engaged in war work, either in the Army or Navy or othe wise.

Institutions Reperesented.—The classification of graduat students according to the institutions from which they ha received degrees was as follows:

	1916–17			1917–18		
	No. of institutions	No. of students	Percentage of students	No. of institutions	No. of students	Pe a stu
University of California	1	675	61.8	1	526	6
Other California institutions	11	119	10.9	9	87	1
Other institutions west of the Rocky Mountains	20	72	6.6	14	44	
Middle Western institutions	65	165	15.1	49	121	1
Eastern and Southeastern institutions	53	108	9.9	37	63	
Foreign institutions	25	27	2.6	18	21	

The total number of institutions represented in these figure for the four successive years was 168, 207, 175, and 128. Th great falling off in the number of institutions since the first yea of the war shows the effect of the war on the migration o graduate students.

Candidates for Higher Degrees and Degrees Conferred.—Th number of accepted candidates for higher degrees, the numbe of degrees conferred, and the number of recommendations fo th high school teacher's certificate issued by the University have been as follows:

Degree	1915–16		1916–17		1917–18	
	Candidates	Degrees conferred	Candi dates	Degrees conferred	Candi dates	Degrees conferred
M. and M.A.	295	149	297	131	259	95
G Arch.	3	1	4	1	3	0
G Educ.	0	0	2	1	7	1
G P.H.	0	0	1	1	1	1
J.	32	22	39	30	15	5
C.	1	0	1	0	0	0
M .Eng	----	----	----	----	1	1
M .Eng.	----	----	----	----	1	1
E.	0	0	1	1	1	0
P D.	95	22	99	33	84	18
Total	426	194	444	198	372	122
H gh School Teacher's Recommendations	243	218	333	290	275	241
Grand Total	669	412	777	488	647	363

Here again the effect of the war is shown in the greatly reduced number of degrees conferred in 1917–18.

The number of candidates who either withdrew or were disqualified has been as follows:

	1914–15	1915–16	1916–17	1917–18
M.S. and M.A.	15	22	24	23
J.D.	0	1	5	4
Ph.D.	2	3	13	7
H.T.R.	0	17	1	14

Up to the present time the University has conferred a total 199 degrees of Doctor of Philosophy. Of these only 18 were nferred during the past academic year, as compared with 33 ring the preceding year. The following table gives a comrehensive view of the past and present activities of departments regard to graduate and research work leading to this degree:

	Total No. Ph.D.'s conferred	Candidates Ph.D. 1915–16	Ph.D.'s conferred 1915–16	Candidates Ph.D. 1916–17	Ph.D.'s conferred 1916–17	Candidates Ph.D. 1917–18
Agriculture	8	6	3	6	3	3
Anthropology	2	0	0	0	0	0
Archaeology	1	0	0	1	1	0
Astronomy	21	8	1	8	3	5
Biochemistry	4	2	1	3	1	3
Botany	12	3	2	1	1	1
Chemistry	20	6	5	5	4	3
Dentistry	0	0	0	0	0	1
Economics	3	5	1	6	0	6
Education	3	9	0	10	1	6
Electrical Engineering	0	0	0	0	0	1
English	4	0	0	2	0	3
Geology	10	2	0	3	2	2
German	3	4	0	4	0	5
Hebrew	1	1	0	0	0	0
History	17	9	2	9	5	4
Hygiene	0	1	0	0	0	0
Jurisprudence	0	1	0	1	0	1
Latin	4	3	0	2	0	0
Linguistics	1	0	0	0	0	0
Mathematics	11	4	2	1	1	3
Medicine	0	0	0	0	0	3
Oriental Languages	0	2	0	2	0	1
Palaeontology	8	3	1	2	2	0
Pathology	0	1	0	1	0	1
Philosophy	5	2	0	2	2	1
Physics	9	5	1	6	2	10
Physiology	9	0	0	3	0	3
Political Science	5	6	0	7	2	4
Psychology	0	1	0	2	0	1
Romanic Languages	2	5	2	3	0	1
Zoology	18	6	1	9	3	12
Total	181	95	22	99	33	84

The usual table showing the distribution of graduate students by major subjects for candidacy for the Master's and Doctor's degrees and for the recommendation for the high school teacher's certificate is omitted this year, as it appears to be of little significance on account of war conditions.

Graduate work in the Summer Session.—The relation of the nmer Session to the Graduate Division is indicated by the owing table:

Year	Master's degrees conferred	Enrolled in Summer Session	Percentage
1912–13	89	15	17
1913–14	119	19	16
1914–15	119	18	15
1915–16	149	27	17
1916–17	131	33	25
1917–18	95	28	29

Fellowships.—In spite of war conditions, the University has n able to continue its usual high standard in the appointment fellows. Resignations of appointees called into service were merous and, contrary to previous custom, vacancies were filled the remainder of the academic year. A complete list of appintees and the terms of appointment form part of the reder's records in the *Annual Register.*

Board of Research.—With the approval of the President, the ard of Research has made the following special grants to memrs of the faculty in furtherance of research work not otherwise ovided for:

To Professor Rudolph Schevill, the sum of $50 for copying manuscripts pertaining to his critical edition of the work of Cervantes, which, when completed, will reach 18 volumes.

To Professor George D. Louderback, the sum of $200 to assist him in getting under way his investigations on the manganese deposits of California, a mineral essential for war purposes.

To Professor H. E. Bolton, the sum of $150 for the employment of an assistant in his research work on manuscripts, supplementing a grant of $600 for the preceeding year.

To Professor C. A. Kofoid, the sum of $225 for the completion of his monograph on the ''Dinoflagellates of California,'' a contribution to the Semicentennial Publications.

To Professor W. A. Setchell, the sum of $250 for the continuation of his researches in coöperation with Professor N. L. Gardner, on the ''Marine Algae of the Pacific Coast.''

6. To Professors F. E. Pernot and B. M. Woods, the sum of $50 f clerical help in reading the proof of their ''Table of Logarith and Hyperbolic Functions,'' a contribution to the Semicentenni Publications.
7. To Dr. Bruce Clark, the sum of $164 for traveling expenses in co nection with the meeting of the National Palaeontology Socie held in Pittsburgh, December 31, 1917, to January 2, 1918.
8. To Professor A. O. Leuschner, the sum of $75 for traveling expens in connection with the fall meeting of the National Academy Sciences held at Philadelphia on November 20 and 21, 1917.
9. To First Lieutenant Dinsmore Alter, Coast Artillery, Fort Winfie Scott, formerly of the Berkeley Astronomical Department, the su of $100 for the construction of an improved model of the rang finder for infantry use designed by him and highly commende by the War Department.
10. To Professor Rudolph Schevill, the sum of $60 for stenograph assistance in preparing the manuscript of his researches on th ''Life of Cervantes.''
11. To Professor W. W. Cort, the sum of $40 for the completion of h researches on the ''Anatomy of the Japanese Blood Fluke Schistosom Japanicum.''
12. To Dr. P. E. Smith, the sum of $120 for the completion of his studie on the glands of internal secretion.
13. To the Department of History, the sum of $12.50 to prepare fo publication in the History Series a paper by Miss Ruth Putna entitled ''California, the Name.''
14. To Professor H. E. Bolton, the sum of $50 for the preparation of map to illustrate the Kino volumes in the Semicentennial Serie
15. To Professor Richard F. Scholz, the sum of $50 to prepare for publica tion his researches on ''A Reconstruction of the Autobiograph of Augustus.''
16. To Professor W. W. Campbell, the sum of $185 for traveling ex penses in connection with the annual meetings of the Nationa Academy of Sciences at Washington and the American Phil sophical Society at Philadelphia, April 18 to 24, 1918.
17. To Professor W. L. Jepson, the sum of $300 to further his researche on the flora of California. This grant was made in anticipation o further contributions at the rate of $900 per annum for two o three additional years.
18. To Professor H. E. Bolton, the sum of $80 as a further contributio to the preparation of a map to illustrate the Kino volumes in th Semicentennial Series.

. To Professor W. A. Setchell, the sum of $500 as a further contribution for the continuation of his researches in coöperation with Professor N. L. Gardner on the "Marine Algae of the Pacific Coast."

The amount available in the Budget for 1917–18 for re- arches not otherwise provided for was $4000, of which only 2634 was appropriated.

Grants numbered 2, 6, and 9 were in direct promotion of war ork, No. 6 because it enabled Professor Pernot to devote his me to certain highly successful researches for the Signal Corps.

Other war researches of the University were provided for by ppropriations on the part of the Scientific Committee of the tate Council of Defense. The Departments of the University of alifornia have been of service to the United States Government hrough numerous and important scientific contributions. These re contained in the individual reports submitted to the Presi- ent and published at various times by the University, par- icularly in Volume 20, Part 3, of the *University of California hronicle.* The total amount placed at the disposal of California cientists for the academic year 1917–18 was $37,300. The esearch Board of the University consisted of the Dean of the raduate Division, chairman; the Dean of the Faculties; and rofessors Merriam, Evans and Bolton.

The Scientific Committee of the State Council of Defense ncluded from the University of California Dean Barrows and rofessor Merriam, who served successively as chairmen; Pro- essor Leuschner, vice-chairman, and Director Whipple.

The Faculty Research and Hitchcock Lectures.—Professor . N. Lewis was honored by the Academic Senate with election s Faculty Research Lecturer for the year 1917–18. After his ntrance into the Chemical Warfare Service, in which he now olds the rank of lieutenant-colonel, Professor Rudolph Schevill was elected Faculty Research Lecturer, with the stipulation that Professor Lewis should deliver the anual lecture at the close of the war. Professor Rudolph Schevill chose for his subject, "Cervantes and Spain's Golden Century of Letters." The Faculty Research Lecture was delivered March 21 in connection with the Semicentenary Celebration of the University.

The Hitchcock Lectures were delivered by Professor George Fillmore Swain. The dates and subjects of his lectures were as follows:

March 18—"The Quebec Bridge."
March 19—"The New Quebec Bridge."
March 20—"Subways and Rapid Transit in Cities."
March 21—"Water Power Legislation."
March 22—"Some General Principles and Disputed Points in the Valuation of Public Utility Corporations."

Respectfully submitted,

A. O. LEUSCHNER,
Dean of the Graduate Division.

HASTINGS COLLEGE OF THE LAW

SAN FRANCISCO, July 1, 1918.

To the President of the University,

SIR: I have the honor to present the following report of the Hastings College of the Law for the year 1917–18.

The work has been well done by the instructors of the various classes. The number of classes, however, has been greatly reduced by reason of the war.

The decrease in student enrollment, in our case, has not been as great as in many other law schools of the country. Last year we had 99 registrations, while this year we had 41. There were 10 members in the Senior Class, six of whom we recommended for graduation. They accordingly had confered upon them by the University the degree of Bachelor of Law.

Respectfully submitted,

EDWARD R. TAYLOR,
Dean.

HOOPER FOUNDATION

San Francisco, July 1, 1918.

o the President of the University,

Sir: I have the honor to present the following report of the eorge Williams Hooper Foundation for Medical Research for he year 1917–18.

This department, like all other University departments, has elt the effect of war conditions. Valuable men have gone into rmy work, problems have been put aside to enable workers to oncentrate upon research problems which seem to have a close elationship to war conditions, and much time has been spent y various members of the staff in the instruction of army nedical officers who are detailed to the Medical School for special raining in surgery and laboratory work.

A special course in laboratory technique has been given durng the entire summer by Drs. Meyer, Walker, Rusk and Hurvitz. This course was offered to women who had had certain undamental training and was intended to fit this selected group f women to take up laboratory work in base hospital laboratories ither here or abroad. The response to this course was most ratifying. Only one-third of the applicants could be accepted, ecause of lack of space, and the spirit of enthusiasm which revailed enabled these women volunteers to develop technical kill and judgment to a surprising degree. The present oportunities for service in medical school or base hospital laboraories should attract many volunteers.

Vivisection or animal experimentation came up again this ear for heated discussion in San Francisco, this time before the Board of Supervisors. Ordinances were introduced by the Anti-vivisection Society to prohibit or to hamper all work done by the use of animals. It required much effort and time on the part of the laboratory staff to place the required correct information before the Supervisors, who finally refused to authorize the passage of such legislation. The University was fortunate in obtaining vigorous statements from the Surgeon Generals of the Army and Navy to the effect that animal experimentation was urgently needed to carry on the necessary medical treatment and medical teaching, as well as medical research in any community. Many army and navy officials testified at the public hearings that the use of animals was necessary to give modern medical treatment, to study new diseases which develop under war conditions, and to study gas poisoning.

Friends of this University must realize that many people are misinformed on this subject and many are not open to reason. Such persons make the wildest statements and by constant repetition persuade others to believe that such misstatements represent the truth. It is important to correct such false impressions, and all persons who are informed should feel it a duty to contradict misstatements about vivisection or animal experimentation. The Director wishes to repeat that this research laboratory is open to visitors at all times and every care is taken to assure comfort, cleanliness and proper care of all the animals. All surgical operations upon animals are performed under complete anaesthesia by ether or chloroform, which anaesthetics have exactly the same effect upon animals as upon human beings. When an animal is to survive an operation, the same surgical technique is used as in any hospital for human beings, to ensure prompt recovery. Morphia is given after operation and every care is taken to minimize the post-operative discomfort. Animals which are not meant to survive after the experiment are kept under the anaesthetic until the end of the experiment and then killed by an overdose of the anaesthetic. Hypodermic injections in animals, as in human beings, do not call for an anaesthetic.

Because legal enactments have been proposed which were to create a committee of laboratory inspection, the Regents of this iiversity have decided to appoint from their own membership Committee of Laboratory Inspection whose duty it will be to spect all University research laboratories. This Committee will are with the members of the various laboratories the responsiity for the proper care of all animals and proper laboratory nduct. All complaints may be referred to this Committee and l be promptly investigated.

RESEARCH WORK

The work of the laboratory staff appears in various scientific blications, but in addition is gathered into the "Collected prints," which volumes are distributed to various libraries d laboratories for convenient reference. During this year, lume II of the Collected Reprints appeared, and this collecn of 24 reprints illustrates the various problems which occupy e laboratory staff. Since this volume appeared there have peared 14 other articles which will make up the greater part the next volume, to appear in the near future. The various oblems must be reviewed with great brevity.

Typhoid carriers have been studied by Dr. Meyer, Miss ilson and Miss Feusier in animals and in human cases. Much owledge as to the cause of this condition and its cure has been ined by careful systematic experiments. Several human cases ve been treated successfully. With Dr. Hinman the studies ve been extended to cover *renal carriers,* with particular reference to the method of production in animals.

Abortus Infection.—Drs. Fleischner and Meyer and Mr. aw have continued the work of last year to study this disease animals and to show convincingly that heavily infected cow's lk is harmless to children.

An exact study and classification of the *anaerobe group of cteria* isolated from war wounds in Flanders is being carried by Hilda Hempl Heller and Dr. Meyer. This study concerns rticularly the bacteria which cause gas gangrene. Single bacilli e isolated by use of a microscopic pipette and thus it is possible to cultivate pure or unmixed cultures from a single pare bacterium. The work is arduous and must be most accurat controlled, but will give much needed information about th important group of bacteria.

Under Dr. Meyer's direction Miss McRoberts is making careful collection, classification and study of the various typ of *Pneumococcus and Streptococcus* which are to be found the respiratory tract of infected persons in the Bay Region California. Valuable coöperation on the part of many physicia is acknowledged. Miss Morris is studying the character of t *intestinal flora* in health and disease and the specific methods changing the same. Miss Halbert is making a routine study all bacteria met with in *renal infections*. Miss Cowan is ma ing a study of clinical cases of *dysentery and paradysente* Mr. Edson is making a careful study of *bacterial growth* as infl enced by the reaction of the culture media.

Dr. Walker is following interesting lines of investigati which relate to *Leprosy and Tuberculosis*. It is known th chaulmoogra oil has a favorable effect on leprosy and defini cures have been reported. Dr. Walker is investigating the effe of this oil and its various soluble acid radicles upon the lar group of acid-fast bacilli to which the leprosy bacillus belong The tubercle bacillus also belongs to this group and Dr. Walk can demonstrate that chaulmoogric acid derivatives in hig dilutions have a powerful effect upon the resistant tuberc bacillus in culture. Experiments with various animals infect with tuberculosis are in progress.

Dr. Schmidt, working in coöperation with Drs. Gay a Robertson, has received grants from the Hooper Foundation further particular investigations. He has investigated the pro erties of *taurin* and devised a new method for its manufacture large amounts. Dr. Gay was investigating the effect of this su stance upon the growth of tubercle bacilli in the body. This wo is virtually suspended because of Dr. Gay's absence on war dut Dr. Schmidt and Dr. Whipple are investigating the chemic nature of the substances obtained from cases of *intestinal obstru tion*. It is believed that these substances (proteoses) are r onsible for this intoxication and some other acute intoxications sulting in profound shock.

Dr. Alvarez is continuing his admirable study of the *gastro- testinal tract.* He is making clear certain fundamental physio- gical and chemical properties inherent in the muscles of the mach and intestine which explain many obscure reactions served in disease.

Mr. Belt, Mr. Smith and Dr. Whipple took up the study of *tal shock* which can be readily produced by dilution and re- acement of the blood plasma in animals. This shock is of much terest as compared with surgical shock and with the shock llowing proteose intoxication. At the same time a great deal valuable data has been accumulated concerning the regenera- on of blood proteins.

Under Dr. Whipple's supervision Mr. Hall completed an cellent study of the intoxication and disturbed metabolism hich may result from large doses of the *X-ray*. Mr. McQuarrie as completed an interesting study of *renal function* as in- uenced by proteose intoxication and intestinal obstruction. r. Davis has investigated the *growth and regeneration of the ver cells* after grave injury by a given poison. This curve of generation may be influenced by differences in the diet. Mr. oster has investigated the fluctuations in the amount of *blood lasma fibrin* which are observed under experimental conditions.

Dr. Rohde has investigated the disturbances in body meta- olism which may follow *thyroid* feeding.

Dr. Appleton completed a study of the red blood pigment f young infants. Necessary modifications of method were suc- essfully made to use the minute amounts of blood obtained.

Dr. Hinman is pursuing his investigation of renal regenera- on following experimental *hydronephrosis.*

Dr. Hooper and Miss Foster have devised an accurate method f *bile salt analysis.* With this method a study of these bile alts in dogs with bile fistulas has been taken up. Very little known concerning the source and general use of the bile salts the internal metabolism of the body, and the field opened up r investigation is enormous.

Dr. Hooper, Mrs. Robscheit and Dr. Whipple have continue their studies of *pigment metabolism.* Particular attention ha been paid to the building up of the red blood pigment and w are now able to measure this pigment construction with grea accuracy. It has been possible to study the effect of variou drugs, diet substances and organ extracts upon this curve of re pigment construction. It is obvious that this knowledge wi enable physicians to shorten the convalescent period followin simple anemia from loss of blood. This applies to war injurie as well as to diseased conditions.

PERSONNEL

The laboratory staff has lost several valuable men becaus of the war. Dr. William J. Kerr enlisted in the Medical Reserv Corps. Mr. C. C. Hall enlisted in one of the base hospital units Dr. C. W. Hooper recently has accepted a responsible positio in Washington to carry on work on war problems.

The laboratory loses the valuable services of Dr. Alice Rohde who has resigned to take up greater responsibilities in th Chemical Department of the University of Pittsburgh.

Miss Margaret Beattie was on the laboratory staff but thre months and was forced to resign because of ill health.

During this year three student fellows were appointed fron the Medical School: Mr. Nelson C. Davis, Mr. Daniel P. Foste and Mr. Irvine McQuarrie. The successful work of these studen fellows has decided the trustees to continue their policy of appointing suitable candidates to fellowships in the Foundation This work gives the candidate invaluable training in genera pathology and experimental physiology and pathology. Suc work may count as the fifth year in medicine or toward any o the University degrees.

Volunteer workers have given services of the greatest valu to the laboratory. It may be said without hesitation that th completed programme of the laboratory would have been absolutely impossible without the aid of the volunteers whose names follows: Miss Maybelle L. Feusier, Miss Louise McRoberts

ss Gwendolyn B. Morris, Miss Jane Halbert, Miss Valance wan, Miss Helen Brown, Miss Anita Cox, Miss Lucille Graham, r. Edward Shaw, Mr. P. J. Edson, Mr. H. P. Smith, Dr. E. C. eischner, Dr. Frank Hinman and Dr. V. B. Appleton.

Particular mention should be made in the case of Miss aybelle L. Feusier and Miss Louise McRoberts, whose volunteer rvices have been of especial value to this laboratory. Their terest has been unflagging and their work of the highest ac- racy. They have accepted appointments as Voluntary Assist- ts in Research Medicine.

Miss Gwen Jones, who entered the laboratory as a volunteer rker, completed her training in December, 1917, and joined r base hospital unit (Number 30), with which she is now rving in France as Assistant Bacteriologist.

Hilda Hempl Heller took up her work with Dr. Meyer hile on a traveling fellowship from Wellesley College, but cently has been appointed by the trustees to a fellowship in is laboratory.

Miss Nelsine M. Neilson has been appointed to a fellowship Research Medicine.

A grant to Dr. Carl L. A. Schmidt has been continued for other year to support his interesting and valuable work in e field of protein chemistry.

This laboratory staff wish to acknowledge the helpful coöpera- on on the part of other departments and individuals in the hool and Hospital. This coöperation has enabled the labora- ry to enlarge the scope of its work.

Respectfully submitted,

George H. Whipple,

Director.

UNIVERSITY INFIRMARY

BERKELEY, July 1, 1918.

To the President of the University,

SIR: I have the honor of presenting to you the followi report of the Infirmary for the year 1917–18.

The University Infirmary for the past year has been a sem military institution, half of the bed capacity being devoted members of the United States School of Military Aeronauti with special hours in the Dispensary given over to these men uniform. The professional care of the men of the Military Scho was rendered by their own surgeons, to whom the staff of t Infirmary extended every courtesy. Several hundred flyi cadets were immunized weekly. Contagious diseases of vario kinds were practically endemic throughout the year, the diseases being brought to the barracks by new recruits who we infected when they came. One death was recorded, that Private Cook of Utah, who succumbed to pneumonia.

The great war has crippled the staff of the Department Hygiene, as well as of the Infirmary, through a number of mem bers being called to the colors. However, the vacancies ha been temporarily filled by the Head of the Department. O energies have centered on various activities, with the prin motive of winning the war. Innumerable physical examinatio were conducted for men entering the government service, a likewise the women physicians examined numerous women f the nursing course, for services as rehabilitation aides, and f the Women's Land Army, besides immunizing against smallp and typhoid many who entered the Y.W.C.A., the Red Cros and other agencies.

Owing to the great demand for workers, salaries were ineased to retain and secure proper assistants. As a result of e continual advance in prices of commodities and materials, e operating expenses of the Infirmary greatly increased. Notithstanding these difficulties, however, our unexpended balance the termination of the fiscal year makes up a good surplus.

The Dental Annex of the Infirmary has completed a very ccessful year—under the professional services of Drs. Johnson nd Chessall. Both of these capable dental surgeons are now fficers in the United States Army.

Of the 681 house patients actually confined to bed for the past ear, with an average stay of $5\frac{3}{5}$ days, the Head of the Departent reports one death—a student whose skull was crushed by eing run over by an automobile.

It is gratifying to the University of California to learn that ll the physicians connected with the Infirmary, since its incepion, with the exception of 2, are now members of the Army or avy. Our service flag has 19 stars, for 11 medical and four ental officers and four nurses.

Respectfully submitted,

Robert T. Legge,
University Physician.

IMMUNIZATION SERVICE

July 1, 1918.

o the President of the University,

Sir: I have the honor to submit herewith my annual report f the immunization service conducted at the University Inirmary during the academic year 1917–18.

Smallpox Vaccination.—In the last annual report, mention was made of a statement of our methods for the recognition of smallpox immunity, which was prepared at the request of the Council of National Defense. On February 26, 1918, the Instructions for Filling out the Vaccination Register (Form 81, Medical Department, U.S. Army) were revised as follows:

Old Instructions: 4. The result of the vaccination agains smallpox will be recorded as successful or unsuccessful. Th term protected will not be used.

Revised Instructions: 4. The result of vaccination agains smallpox will be recorded as immune reaction, vaccinoid, vaccini or unsuccessful. The immune reaction appears as an areola afte 24 hours and disappears in 72 hours. In a case of vaccinoid ther is a small pustule which appears and disappears more quickl than in vaccinia. These reactions are evidence of protectio The term "protected" will not be used.

From our own experience, we can assure a great saving i time and vaccine virus if these new instructions are carefull followed.

On September 11, 1917, a student entering the University month after the opening of the semester was vaccinated with vaccine which had been used with uniform success on intrants a the opening of the semester. The vaccine had a potency expectancy until the first week in November. The student ha been vaccinated more than 10 years previously and presented a indistinct scar. No reaction resulted from this vaccination, no from revaccination with the same vaccine on September 21 an November 16. The student was excused from further vaccinatio until the following semester, when fresh vaccine would be provided for the entering class. Unfortunately she did not retur to the University and therefore furnishes the first instance o smallpox vaccination failure in the four years since our presen methods were finally put into practice. The vaccine used a the University is practically never removed from the ice an has been shown experimentally to retain a high degree of potenc after six months ice box storage. Inquiry at the producin establishment resulted in the information that the vaccine used in this instance had been ground in a slightly alkaline glyceri instead of the customary neutral product. Further study, mad at the request of the State Board of Health, of 39 additional failures occurring in various communities around San Francisc Bay showed in every instance that a vaccine ground in alkaline glycerin had been used. As this vaccine is subject to sudden ss of potency, our failure is satisfactorily accounted for with- t resorting to the dubious explanation of "natural immunity."

On the basis of 2271 intrants examined during the year, the llowing percentages have been determined:

Intrants	1913–14 Per cent	1914–15 Per cent	1915–16 Per cent	1916–17 Per cent	1917–18 Per cent
quiring vaccination	31	20	21	20	21
ith history of smallpox	3	6	3	4	3
owing no vaccination scar	19	16	17	19	18
ever vaccinated	16	6	7	8	9

Typhoid Vaccination.—During the year, the quantity of phoid vaccine given at each dose was raised from 0.1 mg. to 15 mg. without increasing the number of doses. Typhoidin sts of a number of persons vaccinated during the year gave niformly positive results. Negative results were obtained in ree instances, two vaccinated two years previously with three oses of sensitized vaccine, and one vaccinated five years pre- iously with three doses of unsensitized vaccine (army). A ositive reaction was also secured in a case giving a history of yphoid 10 years previously, as well as in a case vaccinated two ears previously, two vaccinated three years previously, and our vaccinated four years previously, all with three doses of ensitized vaccine.

Vaccinations were performed with a number of different ombinations of typhoid vaccine, sensitized and unsensitized, ith sensitized paratyphoid vaccine, A and B. The results ere compared with vaccinations with the new triple vaccine unsensitized typhoid combined with paratyphoid A and B) sed by the U.S. Army. The following conclusions were drawn:

1. Reactions to unsensitized typhoid vaccine were greater than o sensitized typhoid vaccine.

2. Reactions to sensitized typhoid vaccine combined with ensitized paratyphoid A and B vaccine were greater than to nsensitized typhoid vaccine combined with sensitized para- yphoid A and B vaccine.

3. The army vaccine appears to give greater reactions th either sensitized or unsensitized typhoid vaccine when combin with sensitized paratyphoid A and B.

4. The army vaccine appears to give less reaction than eith sensitized or unsensitized typhoid vaccine alone.

Respectfully submitted,

J. N. Force,

Assistant Professor of Epidemiology.

SMALLPOX VACCINATIONS

Academic Year 1917–18

Results Classified According to Vaccination History

	Vaccinia		Vaccinoid		Immune reaction		Failure	
Scar absent	Number	%	Number	%	Number	%	Number	%
Previously unvaccinated	212	99	2	1	....	....	....	....
History of smallpox	2	16	5	42	5	42	....	....
Previously vaccinated	166	83	19	10	13	7	....	....
Scar indistinct	17	47	8	22	10	28	1*	3
Scar distinct	1	8	1	8	10	84	....	....
Total vaccinations								472

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* This student left the University before revaccination with fresh virus could performed.

TYPHOID VACCINATIONS

Academic Year 1917–18

					Percentages of reactions															
	Number of persons inoculated				Local								General							
					Slight				Severe				Slight				Severe			
Number of inoculations	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
*Vaccine																				
1	9	9	8	3	44	33	12	....	11	....	12	....	11	22	....	....	....	....	....	....
2	8	8	7	6	50	50	57	17	....	12	....	....	62	25	14	....	....	12	....	....
3	7	6	6	4	14	33	17	....	30	17	17	....	30	....	....	50	....	33	....	....
4	15	6	6	6	7	17	....	....	20	....	17	....	20	17	....	....	7	....	....	....
5	12	12	12	....	42	42	25	....	8	25	8	....	25	25	8	....	....	25	....	....
Revaccinations																				
*Vaccine																				
1	3	3	3	1	....	33	....	....	....	33	....	....	....	....	....	....	....	33	....	....
2	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
4	3	1	1	1	33	100	....	....	33	....	....	....	33	....	....	....	33	....	....	....

*Vaccine 1. Sensitized typhoid.
Vaccine 2. Unsensitized typhoid.
Vaccine 3. Sensitized typhoid combined with sensitized paratyphoid A and B.
Vaccine 4. Unsensitized typhoid combined with sensitized paratyphoid A and B.
Vaccine 5. Unsensitized typhoid with unsensitized paratyphoid A and B (army).
Slight local reaction: Redness of the inoculation site from 40 to 75 mm. in diameter.
Severe local reaction: Redness of the inoculation site over 75 mm., in diameter.
Slight general reaction: Headache, lassitude, disturbed sleep, loss of appetite, a rise in temperature to 38 degrees C.
Severe general reaction: Chill, diarrhoea, a rise in temperature above 38 degrees C.

UNIVERSITY LIBRARY

BERKELEY, July 1, 1918.

To the President of the University,

SIR: I herewith submit a brief report on the Universi Library for the year 1917–18. Full statistical, department statements are kept in the librarian's office.

Conditions resulting from the war have affected every pha of library activity. The reduction of funds for book purcha has diminished new accessions, and were it not that a very co siderable number of books, previously ordered, arrived at tl beginning of the fiscal year, the total would have been much les

Administration.—Three changes of importance have bee made. The reserved book room is one of the new features. Bool reserved by instructors for use by the various sections are store along the south length of the former periodical room, in stacl which are separated by a wire screen, provided with turnstile from the space used by readers. Free access to the enclosure granted students, but as they pass out through a single exit, call slip is filed for any book taken. The majority of the book within an hour or more, are dropped through an aperture i the desk, discharged and returned promptly to their proper loc tions in the stack, whence they can be again withdrawn. B this system obvious advantages are gained, and losses are r duced to a minimum.

Consolidation of the Reference and Periodicals departmen was effected by storing current periodicals in the new east reac ing room, adjoining which, and quite close to the public catalogu the quarters of the reference staff. The periodical records, d all binding, are handled by the accessions department.

The Shelf and Loan departments have been united under the ntrol of the Superintendent of Circulation. As a consequence re is a better adjustment in the services of attendants, at the n desk and in the book stack.

The status of departmental libraries was formally fixed by e following resolution adopted by the Academic Senate, April, 18:

Resolved, That the Senate approve of the general policy of intaining a comprehensive central collection of books as ainst the distribution of these in departmental libraries; and limiting the withdrawal of books and periodicals for deposit departmental libraries to those which are exclusively used by e departments concerned and which are replaceable in case of ss.

ACCESSIONS DEPARTMENT

(MISS C. R. BRANDT)

	Volumes	Volumes
Received by purchase	6,275	
Received by binding of periodicals	2,161	8,436
Received by exchange		1,341
Received by gift		6,208
*Received by departmental libraries		3,389
		19,374
Volumes in library June 30, 1917		355,192
		374,566
Withdrawn and lost, 1917–18		297
Total volumes in library		374,269

Periodicals and serials received by purchase, exchange and ift number 8411, a net increase of 301 over the previous year.

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* Departmental libraries include the Law and other campus libraries, and the llections of the College of Dentistry, the University Farm at Davis, and the Citrus xperiment Station at Riverside. Mrs. Hurwitz, librarian of the Medical School, ports the addition of 1889 volumes this year.

IMPORTANT ADDITIONS

General Library

Annales de géologie et de paléontologie. fasc. 1–32.
Archaeologia Cambrensis. 67 vols. 1st ser. 1–4; 2d ser. 1–5; Suppl. 18
 3d ser. 1–15; 4th ser. 1–14; 5th ser. 1–17; 6th ser. 1–7; Inde
 2 vols. 2 extra vols.
Aristophanis Codex Ravennas (Codices 9). 1904.
Bequet. Leon. Répertoire du droit administratif. 28 vols. in 26. 18
 1912.
De Toni. Syllogi algarum. 5 vols. in 7.
France. Comité des travaux historiques et scientifiques. Section de g
 graphie historique et descriptive. Vols. 1–26.
Journal of biblical literature. Vols. 1–33, 35–36.
Index medicus. Series 1, 1879–99. 21 vols. With continuation Bib
 graphia medica 1900–1902. 3 vols.
La Lumière électrique. 15 vols.
Muséum d'histoire naturelle, Paris.
 Annales. 21 vols.
 Annales. Memoires. 20 vols.
 Archives. 10 vols.
 Nouvelles Archives. Ser. I–IV: vol. 4. 34 vols.
Musical association. Proceedings. 1874–1915. 41 vols.
Petroleum review. Vols. 1–25.
Revue d'histoire et de littérature réligieuse. Vols. 1–12.
Revue du droit public. Vols. 1–33, 1894–1916.
La Revue socialiste. Vols. 1–38.
Spain. Comision del mapa geologico. Memorias. 24 vols.
Zoological records. Vols. 1–36.

Law Library

Canadian railway cases annotated, and Digest.
Selden society. Publications. Vols. 1–32.

Gifts.—The Spanish collection in gradual process of for ation by Mr. J. C. Cebrian (to which he added some 450 volum this year) is of wide range. It comprehends not merely litera and philological works by Spanish authors, often in early extremely rare editions, but standard books in history, economi the sciences, and arts. When more fully developed it will least typify and illustrate Iberian culture and contributions the intellectual resources of the world.

Mrs. Lois T. Howison has presented the manuscripts and rrespondence of our revered Professor George H. Howison, d the philosophical portion (1235 volumes) of his library; oice editions in the best of condition.

The brothers J. L. and Fred Mundwyler gave a valuable llection of chamber music (about 240 pieces), some being rare early editions.

By bequest of Allen Knight his special library on Account- cy (600 volumes) has been received.

Mr. Irving C. Allen (for some years Petroleum Chemist in e U. S. Bureau of Mines) has given a very considerable col- ction of books and pamphlets on Petroleum. More valuable an these is his manuscript bibliography of the subject, with nopses of articles in periodical literature; and his extensive tter files, in which his correspondence is arranged by subject nder 174 headings such as Allotments, By-products, Calorim- try, Flash-point, etc.

Mrs. Phoebe A. Hearst has laid us under obligations by the ift of some rare books, and also of Martin's History of Oriental arpets before 1800.

The third splendid volume of Pictures in the collection of . A. B. Widener, containing British and later French painters, as received.

Mr. T. L. E. Haug, of Berkeley, gave partial sets of the ociety of Naval Architects, and Engineering.

From Mr. Henry Swan, of Toronto, Canada, came a prized opy of Bishop Berkeley's Three Dialogues Between Hylas and hilonous, in the rare, first edition of 1713.

Miscellaneous gifts include a miniature silver-plated replica f the Sather Campanile from Peter M. Diers of Berkeley; a ronze medal, University of Leipzig, 1909, from Mrs. Howison; bronze medal commemorating the founding of New Orleans, 1717, from the French government; a bronze bust of Voltaire from Mrs. Manfred Brandenstein of San Francisco; and a set of 600 Keystone stereographs, in case, from Professor H. M. Stephens.

Catalogue Department: Classed Catalogue Division (M Gunthorp).—Some 7490 titles in 14,260 volumes have been cat logued. The cataloguing of the Library of French Thought in progress.

Consolidation of the old author and new dictionary catalog was completed by Miss Martin, March 18, 1918.

Catalogue Department: Reclassification Division (Miss He rick).—The subjects Geography, Anthropology and Educati were completed, and History other than American is fairly begu Some 11,609 titles in 22,893 volumes have been catalogued. the work progresses a larger proportion of new accessions handled, nearly one-quarter of the new books being catalogu this year. By harmonizing slight differences in catalogue deta as heretofore practiced by the two divisions, the old cards wit out change, except as to call numbers, can be used in numero instances in the new dictionary catalogue. After a year's tri the experiment of having each assistant classify as well as cat logue the books assigned her seems well justified by resul Additional assistants are much desired, although not urged und present conditions.

Depository Union Catalogue.—The addition of 66,067 car this year brings the total of this invaluable reference catalog to 972,041 entries.

Circulation Department (Mr. Bumstead).—The war h greatly affected the personnel of this department, and only o experienced attendant remains. Service necessarily has n measured up to former standards of efficiency and promptne but the infrequent complaints received indicate forbearance the part of our public and a recognition of the difficulties und which we have labored. The books in the stack have received thorough cleaning. Inventory was only partially taken this yea An adjustment has been made of rate of pay of pages proportio ate to their length of service. Summarizing the statistics circulation we find that, including both day and home use, w issued 140,229 volumes from the loan desk and 271,591 volum from the reserved book room. Over 8500 notices for overd

ks have been mailed. Over 151,000 volumes have been shelved
shifted in stack and seminary and reading room.

Reference Department (*Miss Coulter*).—This department, in
lition to customary service, has answered 9163 inquiries re-
ring more or less research, and 105 questions received by mail.
response to requests we have prepared lists of references on
ome tax, free ports, marine ways, food conservation, vegetable
, vocations for disabled soldiers, grain elevators, the soldier's
t, San Francisco harbor, etc. The ''New Books'' of each week
now under charge of the reference department, likewise the
ntents of the rare book room, and the collection of maps,
ich last have been fully classified and listed.

Inter-library Loans.—Our loans to other institutions num-
ed 274 (522 volumes), and to departments of the University
ated outside the campus 68 (128 volumes). We borrowed 81
es (128 volumes).

Events.—On Lafayette's birthday, September 6, 1917, the
rary of French Thought was dedicated under the direction
the Friends of France. The proceedings are contained in the
iversity of California Chronicle for October, 1917, and were
rinted, with additions and illustrations, in separate pamphlet
m.

During the Semicentenary in March, 1918, an extensive ex-
it was made of photographs, portraits, and other material,
strating the history of the University and the growth of
rkeley. The Hearst-Pathe News Service has presented a film
wing activities of the week.

Notes of Work.—The classification of the Archives material
s been worked out in minute detail, and the bound books have
n remarked accordingly. The unbound portion will be simi-
ly treated later.

Our large collection of duplicates have been unpacked. A
nsiderable quantity has been sold for waste paper, and a great
mber of volumes have been utilized for departmental libraries.
e balance will be roughly classified, and sold or used for ex-
nge.

A great number of books have been turned in to the library
students and others for use at army camps, five boxes having

already been shipped to Camp Fremont, and collections are st being made in readiness for the next book "drive."

A Library Handbook, prepared by the staff, has been pu lished. This handy little pamphlet, containing a description the building and its contents, information as to the classificati and catalogue, and regulations for use of books, will prove great assistance to new instructors and students.

The Summer School in Library Science this year is being co ducted by members of the library staff.

Financial Statement.—The budget for the year 1917–18 as follows:

Salaries	$30,040
Assistance	22,000
Additional assistance in recataloguing	2,700
Books	15,000
Binding	5,000
Expense	5,000
	$79,740

Library Staff Changes

Appointments.—Mary Ruth Smart, junior assistant, Augu 6, 1917; Katherine Kilbourn, junior assistant, December 1 1917; Marjorie Hopkins, clerical assistant, October 24, 1917.

Resignations.—Robert J. Usher, superintendent of circul tion, August 23, 1917; Harry J. Rowe, senior assistant, October 1917; John A. Dean, senior assistant, March 16, 1918; Mrs. Eth S. Bucher, senior assistant, August 1, 1917; Clarence H. Hur junior assistant, October 20, 1917; Louise H. Madsen, cleric assistant, March 16, 1918; Florence M. Baker, clerical assistan January 1, 1918; Edith M. Schulze, clerical assistant, Februar 11, 1918; Kristine Seeborg, clerical assistant, April 30, 191 Harold Brainard, attendant, August 4, 1917; Thomas Slusse Jr., August 30, 1917; John F. Phelps, December 15, 1917.

Respectfully submitted,

J. C. ROWELL,

Librarian.

LICK ASTRONOMICAL DEPARTMENT

LICK OBSERVATORY

MOUNT HAMILTON, July 1, 1918.

the President of the University,

SIR: I have the honor to submit herewith my report for the riod July 1, 1917, to June 30, 1918.

The fulfilling of war duties has affected appreciably the out- t of investigational results during the past year.

Dr. Curtis was absent eight weeks in August, September, and tober, in charge of the San Diego School of the U.S. Shipping ard for the training of officers to equip our enlarged Merchant arine.

Mr. C. D. Shane, University Fellow, has been absent con- uously since August 20 in the same service at Astoria, Oregon, d Bellingham, Washington, successively.

Professor Wright has been absent since January, for service the Berkeley Astronomical Department, to relieve officers of at department who were engaged in war service. Mr. Wright's pointment in the Berkeley Department has been continued for e whole of the next academic year.

Mr. Curtis served in the Berkeley Astronomical Department ring the last two months of the academic year, substituting for ofessor Crawford, absent on war service. Mr. Curtis in- ucted in Navigation a large class of prospective ensigns in the S. Navy.

Mr. Curtis is at present a member of the staff of the Summer ssion of the University; his chief duty is the training of ensigns r the navy.

It has not been possible to find satisfactory substitutes f
Messrs. Wright, Curtis, and Shane, to take part in the resear
work of the Observatory. It is an interesting index of preva
ing conditions that no men have applied for University fello
ships or other astronomical positions since the United Stat
engaged in the great war.

The position of engineer became vacant on March 1, 191
and it was decided not to fill this position so long as the w
should last, thus releasing one more man for war service. M
Hoover is now foreman, carpenter, and engineer.

The Legislature which met early in 1917 appropriated t
sum of $40,000 for the construction of a central heating pla
and for a suitable building to house this plant, the carpent
shop, instrument making shop, plumbing shop, and the distilla
engine, generator, and storage battery, which supply electr
current for the various needs of the Observatory, etc.

We had planned to have the more massive building materia
on hand by the end of 1917, in order that the actual constru
tion should begin early in 1918. The difficult excavation f
the building was completed in 1917, the lumber for the co
crete forms, the reinforcing steel, the sand and gravel, we
procured and delivered, and the actual construction was abo
to begin. At this juncture the national government express
the wish that all avoidable use of materials and labor shou
be delayed until after the close of the war. We at once co
formed to this plan. No other new construction has been unde
taken in the past 15 months, and the purchases of new equi
ment have been reduced to a negligible quantity. The resourc
of the Observatory as to men and materials have been availab
at all times for the winning of the war.

International conditions have unavoidably interfered with t
efficiency of our observatory at Santiago, Chile. The cessati
of the normal exports from this country to Chile has modified t
rate of exchange to an astounding degree. The rate at one ti
in 1915 was more than seven pesos per dollar, but since t
United States entered the war this rate has decreased to le
than three pesos per dollar. At the same time, costs of livi

pressed in pesos, have increased in Chile as in other countries. e salaries of our astronomers are paid in gold dollars, but their rsonal expenses are paid in pesos, and these facts are very rious ones for them. These conditions are likewise serious for e Expedition, as the funds available for its support are ex- essed in a limited number of gold dollars.

Dr. R. E. Wilson, Acting Astronomer in Charge of the Ex- dition, resigned to take effect on June 30, 1918. He returned this country and is now engaged in war service. Mr. Charles . Huffer, Assistant in Chile during the past year, is in tem- rary charge of the Observatory, and is at present the only ember of the staff. Dr. George F. Paddock has been appointed cting Astronomer in Charge of the Observatory, but he will not art to Chile for several weeks, in order that certain home needs the work in Chile may be met.

The Lick Observatory had been hoping and fully expecting to serve the total solar eclipse of June 8, 1918, but plans as to uipment and observing programme were held in abeyance until te in March, 1918, owing to uncertainty as to available instru- ents. Our extensive eclipse equipment, left in Russia following e total eclipse of August 21, 1914, was started upon the long ome journey on August 15, 1917, through the kind and efficient fices of Mr. A. G. Freeman, a prominent citizen of California, hose business interests had taken him to Russia shortly before e latter date. The shipment reached Vladivostock about ecember 15, where, owing to political conditions, it remained ntil April. It then proceeded to Kobe, Japan, where it still emains.

Preparations for observing the eclipse could not be delayed eyond March, 1918, and the financial needs of a proposed expedi- ion were outlined to Regent William H. Crocker at that time. e at once offered to meet the expenses, as he had so generously one for many earlier expeditions.

The continued hope that the special eclipse equipment would eturn from Russia in time for use on June 8th had prevented s from purchasing substitute instruments, and even from bor- owing and adapting lenses, prisms, etc., available in other parts of this country. It was not until the first of April that we proceeded to prepare such instruments as the portable equipment of the Lick Observatory and other departments of the University would make possible. Dr. Lewis, Professor of Physics in the University, was invited to join the expedition and use any equipment that his department could supply, on loan. Professor Leuschner most generously placed at our service any and all parts of the equipment of the Students' Observatory which could be adapted to our requirements, and this offer was accepted as to several indispensable items—break-circuit chronometer, chronograph, sextant, theodolite, telescope driving clock, spectrograph slits, etc. Professor Burckhalter, Director of Chabot Observatory, offered the use of two photographic lenses, aperture 4 inches, focal length approximately 15 feet, which we gladly accepted. The Lick Observatory fortunately had the greater part of the equipment for a camera 40 feet in focal length, of the pattern designed by Professor Schaeberle in 1893, and so successfully used by the Lick Observatory observers at the eclipses of that and later years. Three spectrographs were designed to utilize prisms, lenses, etc., which could be spared for a few weeks from Mount Hamilton.

The observing station was located a short distance southwest of the town of Goldendale, Washington, an attractive village of 1200 population, 30 or 40 miles east of the central range of the Cascade Mountains, and 10 miles north of the Columbia River, altitude approximately 1600 feet above sea level. We were fortunately able to rent a well-furnished residence and premises, equipped with electricity, running water, etc., which supplied ideal living and working conditions. The mounting, adjusting, and testing of the instruments were completed in good time. The sky may in fairness be said to have been clouded throughout the day of June 8, and during the long hours of waiting the prospects for successful observation seemed hopeless. Fortunately—we could almost say miraculously—a small rift in the clouds occurred at the critical place and time. The sun and a very small area of sky surrounding it cleared less than a minute before the instant of totality arrived, and the sun was again covered with ıds less than a minute after the total phase had passed. We ; and photographed the solar corona in a region of absolutely e sky, and the atmosphere traversed by the coronal rays was a tranquil condition. The programme of observations was ried through as planned, without apparent hitch, except, as learned on developing the spectrograms, that the driving clock the mounting which carried the spectrographs and polariıphs had selected the critical time of totality for running duly fast. The values of the photographs secured with these truments were slightly reduced in consequence.

The photographs of the region surrounding the sun and ona, taken for the purpose of recording the stars, bright and nt, whose rays were proceeding to us through those regions, re affected unfavorably by the clouds which bounded the small a beyond the clear sky, though a goodly number of star images re recorded. Whether these photographs will be able to supply est of the so-called Einstein effect is uncertain, and cannot yet determined. We must first remount these cameras—at Mount milton—and secure photographs of the stars in the same region the sky, next winter, when that region of the night sky shall ve come into observing position. A comparison of the two sets photographs of the same star groups, one set affected by the ı's influence, and the other not, will show, it is hoped, the ture of this influence upon the stellar rays of light which passed se to the sun on June 8th. An examination of the star images ınd on the plates of June 8th has not shown the presence of ıer than well-known stars, and this is in accordance with extations based upon our searches for unknown bodies at preus eclipses, in pursuing the historic Vulcan problem.

Professor Tucker's observations of the moon's position made a v months prior to the eclipse date indicated that the eclipse uld come 20 seconds, more or less, earlier than the time preted in the *Nautical Almanac*. Our observed time was 17 secls in advance of the *Almanac's* prediction, or three seconds er than we had anticipated.

The photographs of the solar corona, secured with the camera 40 feet focus, are splendid and most interesting. The recorded corona is remarkable for the sheaths of curved coronal streamer which surround all of the principal prominences. The form o the inner corona, in so far as it was observable on June 8th, is for the most part, controlled from centers of force or activit residing in or close to the prominences. It seems impossible t question that the forces in the sun responsible for the prominences are the forces responsible for the streamers composin the inner coronal structure. The eclipse photographs reache Mount Hamilton less than a fortnight ago, and there has not ye been time to trace the connection, strongly suspected, betwee the sunspots as centers of solar activity, on the one hand, and th prominences and their enclosing hoods of streamers, on the othe hand.

The coronal photographs obtained with a camera 48 inches i focal length are likewise excellent. The longer coronal streamer are recorded in lengths between two and three solar diameters

The spottedness of the sun at the time of the eclipse was nea the maximum stage and we had expected the general outlin form of the corona to be nearly circular, as for several preceding coronas observed at and near sunspot maximum; that is the coronal streamers proceeding from the north and south pola regions of the sun were expected to be substantially as long and a bright as the equatorial streamers. The prevailing form of th corona at sunspot minimum is one in which the equatoria streamers are long and prominent, and the polar streamers shor and faint. We were surprised to find the corona of June 8th o type intermediate between the maximum and minimum forms Evidently the prevailing hypothesis as to the dependence o coronal form upon sunspot phase calls for further investigatio and probable modification.

The spectrum of the solar corona was successfully observed independently, by Professor Lewis and by Dr. Moore, with suitable spectrographs. The continuous spectrum of the corona wa found to be strong, but the bright coronal lines were surprisingly weak. About a dozen of these lines were recorded and accurate measurements should increase our knowledge of thei wave-lengths.

The green coronal line was photographed successfullly by
. Moore, using 3-prism dispersion, for the purpose of determin-
its wave-length with great accuracy. The coronal stratum,
ing rise to the celebrated green line, was photographed with
less spectrographs by both Mr. Lewis and Mr. Moore, and in-
mation of value as to the distribution of the materials com-
sing the green stratum will result from their detailed study.
may be said, at this date, that the thickest and brightest re-
ns in the stratum do not coincide in position with the solar
ominences, but there may be and probably is some connection
ween them.

Mr. Lewis photographed the spectrum of the sun's western
ge at the instant when the bright lines of the so-called reversing
er were in evidence; about 250 strong lines were recorded.

Mr. Lewis photographed the corona with a double image
nera. Preliminary examination of these photographs indicates
t the light of the corona is strongly polarized even out to the
its of the recorded streamers, a distance from the sun's edge
ater than one solar diameter.

All of our spectrographic and polarigraphic observations are
harmony with the theory that the light of the inner corona
for the most part, inherent and proceeds from materials
ssessing temperatures equal to or above the point of incan-
scence, but that an appreciable share of the light radiations,
ecially from the sections of the corona at considerable dis-
ces from the sun's edge, are shining by reflected and diffused
light, which falls upon the materials constituting those parts
the coronal structure.

Some observers of previous eclipses have made the surprising
tement that visual observations of the inner coronal streamers
ve shown much greater richness of detailed structure than is
ible on the best photographs obtained with the largest cameras.
my request, Dr. John A. Brashear and Dr. Ambrose Swasey
de visual observations of the inner corona. They were unable
see details of structure comparable with those recorded on our
otographs of the corona obtained with the 40-foot camera.

Five volunteer observers—astronomers of great experience in other branches of the subject—secured very definite and tremely valuable observations of the so-called shadow ban visible on the ground, especially during the half minute p ceeding and the half minute following the total phase of t eclipse. Their results are in remarkable agreement as to t positions of the wave crests of the shadow bands, and as to th direction and speed of travel.

It is hoped that rapid progress may be made in the detail and technical study of the eclipse photographs.

Many kind citizens of Goldendale contributed to the succes of the expedition. In this connection special mention is made f Mr. and Mrs. E. R. Morgan, whose residence and premises e occupied, Mr. C. T. Camplan, Mr. Zola Brooks, Mr. N. B. Broo s, Mr. T. Bert Wilson, and Mr. T. A. Graham.

Last year's report noted that the major part of our resour s in the academic years 1915–17 had been devoted to studies of e nebulae, both the so-called gaseous nebulae, whose spectra c sist chiefly of isolated bright lines, and the spiral nebulae, wh e spectra may fairly be said to resemble the solar spectrum, w h rare exceptions. All of the nebular programmes have now b n completed, and many of the results have been published i a preliminary manner. The manuscripts embodying the resu s in their final form are, with one exception, complete, and this one will be completed in the month of July. The series of pa s will compose a volume, entitled "Investigations of the Nebula" in the Semicentenary publications of the University. The le ing results of this programme of nebular research, in so far is they were not described in last year's report, are listed below.

A paper by Mr. Curtis, in charge of nebular photogra y with the Crossley reflector, embraces all work done in this f d with that instrument since the year 1898, when Director Keel 's epoch-making photography of the brighter nebulae was c menced. There are descriptions of 762 principal nebulae d star clusters. The photographs recorded not only these brigh r and more striking objects, but in addition many thousands of fainter nebulae not previously observed. On the photograph of 439 separate small regions of the sky Mr. Curtis has cour d

598 small nebulae, all of which are thought to be spirals. Add-
g to this number the 513 brighter and larger spirals recorded
the same plates, we have the total number 6211 spiral nebulae
served in the 439 small areas concerned.

The effective area of a Crossley plate in the photography of
int and small nebulae was assumed by Mr. Curtis to be 0.75
uare degree. The regions photographed are quite evenly dis-
ibuted over the sky north of 30 degrees south declination; that
over the northern three-fourths of the entire sky. He divided
e celestial sphere into two equal areas, one consisting of a zone
) degrees wide extending 30 degrees on each side of the central
lane of the Milky Way, and the other comprising the two cir-
ılar regions each 60 degrees in radius, about the north and
uth poles of the Milky Way, respectively, and found that 217
gions are located in the Milky Way zone, and 222 regions in
e remaining areas. The distribution of the observed regions
the galactic zone and in the non-galactic regions is, therefore,
nearly perfect balance.

Mr. Curtis further divided the sky into the four zones de-
ribed in the first column of the following table. The number
regions photographed in each zone, the number of square de-
rees covered by these photographs, the number of spirals ob-
rved on these photographs and the average number of spirals
er square degree, in each of the four zones, are set down in the
cond, third, fourth, and fifth columns. If we make the assump-
on, apparently reasonable and justified, that the sample areas
the four zones are truly representative of their entire respec-
ve zones, then the numbers of nebulae which we should expect
find on photographs of equal merit covering the whole of the
ur zones would be as estimated in the last column of the table,
total of 722,000.

Mr. Curtis sees no reason at present existing for doubting the
liability of the estimate that at least 700,000 small spiral
ebulae are within reach of modern reflecting telescopes. This
umber is in confirmation, and I think we may fairly say in
stablishment, of the estimate made by Dr. Perrine, former
ember of the Lick Observatory staff, based upon the relatively

small number of Crossley photographs secured by Mr. Keel and himself during the first seven years of that instrument activity.

Galactic latitude	Number regions	Square degrees	Number spirals	Number per square degree	Number area
+ 45° to + 90°	117	88.50	2,997	34	205,00
— 45° to — 90°	43	32.25	918	28	169,00
± 30° to ± 45°	62	46.50	1,117	24	204,00
— 30° to + 30°	217	162.75	1,179	7	144,00
Totals	439		6,211		722,00

It will be seen, from the fifth column of the table, that t number of spirals per square degree decreases as one passes fr the poles of the Milky Way toward the Milky Way region. T average number in the Milky Way zone, seven per square degr must be further interpreted. Not one of the 1179 spirals served on the plates of the 217 regions in the Milky Way zo 60 degrees wide is situated within the Milky Way structu which is included within the central 15 or 20 degrees of the degree zone; all of them are in the parts of the 60 degree zo which are not occupied by the Milky Way.

Truly the spiral nebulae abhor the Milky Way, and they in general the more plentiful as the poles of the Milky Way approached.

The second paper in the volume, by Mr. Curtis, relates t study of absorbing or obstructing effects in the spiral nebul The results were described in my report for last year.

The third paper, also by Mr. Curtis, embraces his studies f the planetary nebulae, as described in last year's report.

The fourth paper, by Mr. Campbell and Mr. Moore, is titled "The Spectrographic Velocities of the Bright-Line N ulae." It is based upon observations of the bright-line nebu made at Mount Hamilton and at the Mills Observatory, Santia Chile. The programme is complete for all known objects in t class that are bright enough to be observed with exposure times f practicable length—up to a limit of 32 hours. Only nine ot nebulae are known to possess bright-line spectra, and the s ssful observation of these very faint objects would require nger exposures than the other demands upon our observational sources permit at the present time. The leading results of the vestigation are as follows:

The radial velocities of 125 bright-line nebulae have been etermined.

The average radial velocity of the Great Nebula in Orion is 17.5 km./sec., but the results for various details of structure this nebula range from + 9.7 to + 24.9 km./sec. The results o not favor the hypothesis of the rotation of this great nebula s a whole; the observed differences appear to be local or re- ional in character.

The radial velocities of 17 nebulae in the Greater Magellanic loud, observed by Mr. Wilson and his assistants at Santiago, hile, lie between + 251 and + 309 km./sec.; average + 276 km.

The observed radial velocity of the only known bright-line ebula in the Lesser Magellanic Cloud is + 168 km.

The two Magellanic Clouds are thought to be separate stellar ystems, wholly independent of the great stellar system of which ur solar system is a detail.

In addition to the eighteen observed Magellanic nebulae, here are six observed planetary nebulae whose radial velocities re greater than 115 km./sec. These six are located in a very mall section of the Milky Way, their right ascensions lying etween $15^{h}.1$ and $19^{h}.2$ and their declinations between — 9° nd — 38°.

The remaining 101 nebulae yield a speed of — 23.6 km./sec. or the motion of the solar system with reference to these nebulae s a system, assuming the direction of solar motion to be toward hat point whose right ascension is 270° and declination + 30°. The system of 101 nebulae *as a whole* is, therefore, substantially t rest with reference to our stellar system.

Excluding the 18 Magellanic nebulae, which seem not to belong to our system, and the five irregular nebulae which have special characteristics, 102 planetary or small nebulae remain. Their average radial velocity is 37 km./sec.

Thirty-one of the nebulae have diameters less than five seconds of arc. These so-called "stellar" nebulae are found e clusively in one quadrant of the Milky Way and there is reas to believe that they are farther from our region of the stell system than are the other observed members of our system.

The evidence for the existence of the Kapteyn preferenti motion of the bright-line nebulae is slight, if we exclude t group of six Milky Way objects with abnormally high velociti

The estimated relative photographic intensities of the r corded nebular lines in each observed spectrum are set down f nearly all of the objects observed. A wide variety of relati intensities prevails.

Forty-three planetary nebulae were observed with 3-pris dispersion for evidences of rotation or internal motion, and thr with low dispersion. Of these 46 objects, 25 showed intern motion effects. Nineteen, and possibly 21, of these are inte pretable as rotations about axes approximately or roughly pe pendicular to the line of sight, and four appear to be not interpretable.

The most elongated planetary nebulae show the highest r tational speeds, as we should expect of rotating gaseous bodi in equilibrium under the action of the forces of gravitation, g expansion, etc.

In general, the strata most distant from the centers of t rotating nebulae show a reduced rotational speed with referen to the speeds of structures near the centers; a lagging behin of the outer strata, as one should expect from great rotatin gaseous bodies possessing very low internal friction.

The observational data enable us to compute the probab orders of mass in the rotating planetaries. These bodies see to be much more massive than the solar system.

The forms and rotational motions of planetaries observe favor, in our opinion, the hypothesis that their figures are a proximate ellipsoids of revolution.

The spectral lines of ten observed planetaries are doubled, least for the inner structure of these nebulae. The most probab explanation of the doubling is that the centers of the broadene bright lines are reversed into dark lines by virtue of the absor n of an outer, cooler, and more slowly rotating stratum of bulosity. The planetaries are probably larger than their photo-aphic images indicate, to the extent of these invisible absorbing rata.

It is difficult to account for the elliptic outline of the plane-ry nebulae (presumed to be composed of ellipsoidal shells in dimensional space) unless the volumes between the character-tic sharp nuclei and the bright ring structures are filled with pansive gases or vapors that play an important part in main-ining the ellipsoidal shells in equilibrium.

Only about 125 planetary nebulae are known to exist, and the served radial speeds of the planetaries are on the average six-ld that of the radial speeds of the brighter stars which most osely resemble them in spectral character. The scarcity and e high speeds of the planetaries are unfavorable to the view at the stars in general have evolved from planetary nebulae.

If the solar system has been evolved from a typical planetary bula, we should probably have been justified in predicting at the planets near the sun would be of small mass, and those r from the sun of relatively great mass.

A further expected result might well be that the chemical mposition of the minor planets would be quite different from at of the major planets.

The fifth paper, on ''The Radial Velocity of the Greater agellanic Cloud,'' by Mr. R. E. Wilson, Acting Astronomer in harge of the Mills Observatory, presents the detailed evidence r the conclusion that the Greater Cloud is a separate stellar ructure, apparently quite independent of our great stellar stem.

The sixth paper of the volume is entitled ''The Wave-Lengths f the Nebular Bright Lines, and General Observations of the pectra of the Gaseous Nebulae,'' by Mr. W. H. Wright. This xtensive piece of work was described in the last annual report, nd we refer here merely to the general results and conclusions, s follows:

(*a*) The wave-lengths of the bright lines in nebular spectra, bout seventy lines in all, including some lines not previously reported, have been determined as accurately as their brightne permits.

(*b*) The nuclei of the planetary nebulae have been found give a continuous spectrum strong in ultra-violet light, indica ing that they are at a very high temperature.

(*c*) Half of the observed nuclei exhibit the characterist bands of the Wolf-Rayet or Class O stars, and they are pro ably all to be classed as belonging to the same general group O stars. A definite connection is therefore established betwe the planetary nebulae and the Class O stars.

(*d*) There is no essential spectral difference between th Orion nebula and the planetary nebulae of the same spectr class. As the nebular spectrum appears to be sensitive to chang of physical condition in the source this justifies the presumptio that the conditions in both the Orion and the planetary nebul are comparable, a point of view that is supported by the fact th the stars involved in both have a high temperature and posse points of spectral similarity. Spectroscopic evidence does no therefore, of itself, justify the separation of the planetary fro the more extended nebulae, and the placing of one class at th beginning of stellar evolution and the other at the middle end of it.

(*e*) From (*c*) it is to be inferred that the planetary nebul occupy a place in cosmogony next to the Class O, and other hig temperature stars. If these stars are in mid-development, th is also the position of the planetaries. From general consider tions, however, and from (*d*), it seems more probable that a of the gaseous nebulae form a homogeneous group, correspondin to an early stage of cosmical development. This lends strengt to the belief now generally, but not universally, held that th early stages of stellar evolution are characterized by the mos intense heat, and that further development is accompanied by continuously falling temperature.

(*f*) Many of the planetary nebulae, when photographed wit the prismatic camera (slitless spectrograph), present a remark able variety of forms corresponding to the different nebula es. The significance of the variation is not understood. It y be due in part to differences in distribution of the comnent gases of the nebulae; in the case of the line 4686A and ne other lines it appears to be almost certainly due to a locali- ion of peculiar physical conditions. Other causes may also effective in altering the apparent form of a nebula, for in- nce, selective absorption of some of the nebular materials emselves. Whatever the cause it is quite apparent that the age of a nebula as it appears in the telescope, or on a direct otograph, is an integrated one due to the superposition of ny component images which are liable to be quite unlike. It llows that there is a limit to the value of telescopic or photo- aphic observations in the study of nebular structure.

(*g*) A spectrum, apparently continuous, which begins ab- ptly at about the limit of the Balmer series of hydrogen lines d extends into the ultra-violet has been found in the nebulae. is undoubtedly the same spectrum as that observed by Ever- ed in the spectra of the solar chromosphere and prominences, d, as noted by him, corresponds with the ultra-violet absorption st observed by Huggins in the spectrum of Vega. It is prob- ly part of the Balmer hydrogen series, and is of possible signi- ance in the theory of radiation.

(*h*) The probable existence of carbon and nitrogen in the bulae is indicated.

(*i*) A system of nebular classification is suggested.

Additional to the "new star" discovered in the spiral nebula G.C. 4527, referred to in the last report, Mr. Curtis has found o new stars, in the spiral nebula N.G.C. 4321. These discov- ies, in connection with like discoveries in other spirals made at e Mount Wilson Solar Observatory, have enabled Mr. Curtis draw interesting conclusions concerning the distances and mensions of the spirals, as follows:

All the typical new stars discovered to date, more than 30 in mber, have been situated either in the structure of our Milky ay or in the spiral nebulae. That the latter are really within e bodies of the spiral nebulae and not merely in the direction of the spirals and outside their structure and influence, is beyond the bounds of probability. The novae must be regarded a actually parts of the spirals. The average observed magnitud of 27 novae in our Milky Way system is about five and a hal whereas the average observed magnitude of the novae in th spirals is in the neighborhood of 15. There is thus an averag difference of approximately 10 magnitudes between the Milk Way novae and the spiral-nebula novae. All the available ev dence is to the effect that the novae in our stellar system are a great distances from us. If we assume equality of absolut magnitude for the novae in our system and the novae in th spirals, then the latter, being apparently ten magnitudes fainte are of the order of one hundred times as far away as the forme That is, the spirals containing the novae are far outside ou stellar system; and these particular spirals are undoubtedl judging from their comparatively great angular diameters, th spirals which are nearest to us. The conclusion seems unavoi able that the spirals are in general of enormous extent, possibl comparable in dimensions with our own stellar system. Th inference is that the spirals are extremely distant and independent stellar systems.

The 36-inch refractor has been utilized every good night, abou five nights per week, in the continuance of programmes for determining the radial velocities of the fainter naked eye stars, o of stars possessing special interest. The observers were Messr Moore, Paddock, Henroteau, and Thiele. Six hundred and fift spectrograms of ordinary stars have been obtained, with 1-pris and 3-prism dispersions. The measurement and reduction c these plates, conducted principally by Miss Hobe, are nearl up to date.

The brightest new star observed in the heavens in the las four centuries was discovered in the constellation of Aquila o June 8, independently by many observers in many countrie An interesting history of its rapidly changing spectrum has bee in process of recording, with 1-prism and 3-prism spectrograph attached to the 36-inch refractor, chiefly by Mr. Paddock. H and other assistants, observing the new star essentially ever it, have secured 81 spectrograms to date. Mr. Paddock has pared for prompt publication an interesting resumé of the icipal spectral changes and conditions. The first evidences of iange from stellar to nebular conditions have been recorded.

During the year 31 spectrograms of nebulae were also secured ı the 36-inch refractor in completion of the program of ular radial velocity determinations.

The observational programme of the Observatory at Santiago related exclusively to radial velocity determinations. Dur- the year Messrs. Wilson and Huffer secured 11 spectrograms nebulae, all with long exposures, and 329 spectrograms of s. The measurement and reduction of these plates is com- e to date.

Dr. Aitken has observed double stars with the 36-inch re- tor on two nights per week throughout the year. He has le accurate measurements of the relative positions of the ponents of 1335 pairs. The observing list consisted chiefly stars discovered to be double by himself in earlier years, his pose being to determine which systems are in rapid orbital ion.

About 1800 of the more than 3000 Aitken double stars have been re-measured by Mr. Aitken, and about 15 per cent of 1800 have given definite evidence of relative motion in the erval of from 9 to 16 years since their discovery. Approxi- tely 100 pairs have been proved to belong to the class of derately short-period binaries. This is a higher percentage n he had expected to find.

Twenty-five new double stars were found in the year by Mr. ken, chiefly by reëxamination of stars suspected by him in lier years to be double.

Mr. Aitken has computed a new orbit for the binary star ius, which has resulted in an improvement of our knowledge cerning this interesting system. The period of revolution is nost precisely 50 years.

Mr. Aitken has devoted a goodly portion of his time during year to the preparation of a volume entitled "The Binary

Stars,'' which is to appear in the Semicentenary series of Univ sity publications. The book is in press, and its issue is expect within two months.

The work of the Meridian Circle department has been co tinued by Mr. Tucker, with his accustomed energy and hi accuracy. The meridian observations of 1068 stars uniformly d tributed over the zone lying between 50° and 55° of north clination, begun in the middle of the academic year 1916– were completed in March, 1918. This programme has requir about 3500 meridian observations, and it is noteworthy that th were secured by one observer within a period of 14 months; fact, the observations were all made in 12 of the 14 months. T preliminary reductions, such as are required to assure the co tinuance of high accuracy, were made promptly throughout t progress of the work, and about one-fifth of the definite red tions were complete on June 30th. The remainder of the ductions and the proper discussion of the results will occu Mr. Tucker's attention throughout the coming year. Our served positions of these 1068 stars will be used at the Alleghe Observatory as the basis for photographic determinations of t accurate positions of about 8600 stars in the same zone of the sl

In the progress of this programme, Mr. Tucker has found considerable number of stars which have proper motions appreciable size.

Mr. Tucker has made a comprehensive study of the ''visu magnitude scale'' for the stars down to the ninth magnitude, w a view to isolating and explaining certain discrepancies in t existing systems of magnitudes. He has found that the brig ness ratio of second magnitude stars to third magnitude stars but little greater than 2, that the ratio for sixth and sever magnitudes is very closely 2.5, for eighth and ninth magnitu is about 3, and for the still fainter successive magnitudes greater than 3. The variation in the ratio, as one proceeds fr the brighter to the fainter grades of visual magnitudes, has sulted apparently from the great variety of methods employed the evolution of the magnitude scale for the brighter stars a in the extension of the scale to the fainter magnitudes. T k of constancy is an inconvenience to the statistical study of stellar system, rather than a serious misfortune.

Mr. Tucker's further study of the effect of stellar brilliancy on the observed times of transit across the wires in the eye- ce of the meridian circle is in confirmation of the character d magnitude of this effect running through his observations of re than 20 years past. The constancy of this and other im- rtant terms which combine to form the personal equation, and s ability to predict quite precisely the values of the probable rors attaching to the observations which he will make, are evi- nce as to Mr. Tucker's special qualifications as a meridian server.

Many minor studies have been prosecuted within the year by rious members of the staff; e.g., the determination of the ac- rate positions of comets, asteroids, and stars of special interest, Messrs. Aitken, Thiele, and others; the finding of a consider- le number of stars whose radial velocities vary, both at Mount amilton and at Santiago, thus establishing their binary char- ter; the determination of the orbits of several spectroscopic nary stars, by Messrs. Paddock, Wilson, and Henroteau; the iscovery and observation of bright bands in the spectrum of a iral nebula, N.G.C. 4151, and the determination of the velocity recession of that nebula 940 km./sec., by Messrs. Campbell and addock; observations of the occultation of 7 Aquarii by the lanet Venus, by several observers with the 36-inch and 12-inch fractors, and interesting conclusions drawn therefrom by Mr. hiele, etc.

Mr. Aitken was elected a member of the National Academy Sciences in April, 1918.

Mr. Campbell was elected a Foreign Member of the Royal ociety of London in January, 1918.

A number of lectures on astronomical subjects were delivered y various members of the staff.

At the Semicentenary celebration of the founding of the niversity of California in March, 1918, Mr. Campbell delivered n address on "The International Relations of Science, with pecial Reference to the Pacific Ocean Region."

ECLIPSE EXPEDITIONS FROM LICK OBSERVATORY, UNIVERSI OF CALIFORNIA

Date	Place	Donor	In charge of
1889, Jan. 1	Bartlett Springs, Calif.	University	Keeler
1889, Dec. 22	Cayenne, French Guiana	Chas. F. Crocker	Burnham and Schaeberle
1893, Apr. 16	Mina Bronces, Chile	Mrs. Phoebe A. Hearst	Schaeberle
1896, Aug. 9	Yezo, Japan	Chas. F. Crocker	Schaeberle (clouds)
1898, Jan. 22	Jeur, India	Chas. F. Crocker	Campbell
1900, May 28	Thomaston, Ga.	Wm. H. Crocker	Campbell
1901, May 18	Padang, Sumatra	Wm. H. Crocker	Perrine
1905, Aug. 30	Cartwright, Labrador	Wm. H. Crocker	Curtis
1905, Aug. 30	Alhama, Spain	Wm. H. Crocker	Campbell
1905, Aug. 30	Aswan, Egypt	Wm. H. Crocker	Hussey
1908, Jan. 3	Flint Island, Pacific Ocean	Wm. H. Crocker	Campbell
1914, Aug. 21	Brovary, Russia	Wm. H. Crocker	Campbell and Curtis (clouds)
1918, June 8	Goldendale, Wash.	Wm. H. Crocker	Campbell and Curtis

Respectfully submitted,

W. W. CAMPBELL,

Directo

DEAN OF THE LOWER DIVISION

BERKELEY, July 1, 1918.

o the President of the University,

SIR: I have the honor to submit herewith a report on the work f the office of the Dean of the Lower Division for the year end- ng June 30, 1918.

While this office is, in theory, primarily concerned only with e two lower classes, no such line of division is possible in deal- ng with the problems that arise. The business of the office has o do with the entire undergraduate body. The work of admis- ions, and supervision of programmes of study for the lower lasses, indicate duties that affect only the Lower Division; hous- ng accommodations for the student body, relations of fraternities o the University, questions of discipline, military activities of he University, etc., concern the entire student body and are cen- ered in this office. These latter duties have become more ex- ensive than those dealing wholly with the Lower Division.

War conditions have necessarily made many changes in the ndergraduate life of the University. Upper classmen are rela- ively few in number, and great credit is due the few remain- ng seniors for the manner in which they have directed student ffairs during the past year. University affairs, as the usual rimary interest, have however, given way to the more important usiness of the nation. The undergraduate has regarded his stay n the University as temporary. Some have tried to make the nost of their opportunity before being called to service; others ave become restless, and as a consequence, have accomplished ittle in their University work.

The problem confronting the fraternities is becoming increa ingly difficult. The lower classes predominate in the houses. I some no seniors are left. It has, therefore, been impossible fo the few men in charge to maintain the standards of the chapte that formerly were upheld through the strong influence of a larg body of upperclassmen. Owing to the difficulty of keeping full membership, and the increased cost of living, fraternitie have had difficulty in meeting financial obligations. Some hav had to abandon their chapter houses entirely, others have com bined under one roof, and thus have been able to solve the prol lem of living. One house-club found it necessary to dissolv Presumably still greater difficulties will be encountered durin the coming year. It would appear better, in many cases, fo chapters to become entirely inactive for the period of the wa rather than to try to maintain an existence, the benefits of whic are not commensurate with the difficulties and expense involve

It has been suggested that new clubs of women be formed t take over men's houses where the club or fraternity finds it im possible to continue, thus assisting the latter with their leasin or other financial obligations. This in itself should prove o assistance in meeting the housing difficulties of the women stu dents, which, owing to the crowded condition of Berkeley an the high prices, will become serious during the coming year.

Much credit is due the student body for their intense interes and activity in war service. They have shown skill and ability i organizing campaigns for obtaining contributions and have give generously both of their time and means for the support of wa activities.

Respectfully submitted,

T. M. Putnam,

Dean.

MEDICAL SCHOOL

SUMMARY OF MEDICAL SCHOOL REPORTS

SUBMITTED TO THE DEAN BY DEPARTMENTS

July 1, 1918

Anatomy.—Mention has been made in a previous report of the desir-
ity of liberalizing the programme of studies for the Doctorate in
icine so that aptitude and capacity for independent work will con-
ite an essential part of the training required. A distinct gain in this
ction has already been accomplished by the unanimous recommenda-
of the Advisory Board of the Medical Faculty against the creation
pecial medical research degrees, which have appeared attractive to
e faculties, but in favor of continued elevation of standard in the
acter of our curriculum. Attention may again be directed to the
it need of the physical union of the Medical School at the Parnassus
. The student who undertakes to get a well balanced training in
icine while concerning himself with even modest investigative
vities in any of the fundamental medical sciences finds a continuance
hose studies impossible under present conditions.

nstruction in some of the underlying medical sciences will often form
mportant part of an academic programme of studies for students in
culture, in any of the biological sciences, in public health curricula
in physical education. Provision for such instruction should not
ple the power of the departments concerned to continue the high
dard of laboratory instruction necessary in the School of Medicine and
should set free ample time for the accomplishment of research. It would
ear wise that with the further growth of these needs in Berkeley,
ructors for these special purposes be from time to time added to the
lical Department staffs where opportunities for fostering the subjects
cerned will always be in excess of what could be secured by the
aration of such special instruction or the creation of duplicate depart-
its. One or two courses of this type are at present urgently needed in
Department of Anatomy.

In research activities the department has brought to conclusion sev of the distinct lines of effort with which it has been mainly concer during the last two or three years. These concern studies on the v benzidine dyes, the physiological anatomy of reproduction in the rat, histogenesis of the corpus luteum, the effect of corpus luteum prep tions on ovulation, the effect of hypophysectomy in the Amphibian eml on growth, metamorphosis and pigmentation and on the other endoc organs, the existence of a fibrillar framework produced by endothel in the capillaries of various regions of the body, the proof of the tinuity of the dentinal tabules with enamel cul de sacs and many o specific problems in cell or organ structure related to one another i definite programme of research characterized perhaps best as physiolog histology.

Professor Evans was elected a member of the newly constituted C mittee on the Anatomical Sciences of the National Research Council.

Biochemistry and Pharmacology.—Members of the department h continued the investigations which have been in progress for the four years on the nature and action of substances which influence gro and in particular the action of tethelin, the growth-controlling stance which has been isolated from the anterior lobe of the pituit body. The experiments of Dr. Barney have advanced evidence of efficiency of tethelin in the treatment of chronic ulcers. With Burnett, investigations were carried out to determine the relation of the chemical constitution of certain substances to acceleration of growth of carcinomata.

Dr. Haas, holding the Sheldon Traveling Fellowship of Har University, spent a year at this department and carried out investigat on the preparation and properties of ovalbumin and on the elec chemical equivalent of casein, using a new method of attack.

Guy W. Clark pursued studies on the properties and compositio oocytin, the fertilizing and cytolising substance isolated from mamma blood serum.

Dr. Wasteneys has continued his investigations on natural acquired tolerance to drugs and Dr. Sundstroem has investigated climatization to high altitudes and the origin of mountain or avia sickness. This latter work is important on account of the probl which have arisen in connection with aviation.

Mr. S. Hanson has devised a new method of estimating the a tryptic index of blood serum, and also has shown that the protein tient of rabbits remained constant both during periods of intensive f ing and prolonged starvation. In conjunction with I. McQuarrie, found that antipyretics, sodium cacodylate and thyroid extract v without effect on the protein quotient.

Mr. F. I. Harris and Mr. H. S. Hoyt conducted experiments on the ective action of amino acids for certain organisms exposed to ultra-et light. Dr. F. M. Hill conducted studies on the pharmacological on of certain substances which cause a rise of temperature when cted into rabbits.

Dr. Schmidt investigated certain properties of tethelin and apparently blished a possible relationship between the split products of tethelin the active substance of the posterior lobe of the pituitary body. h Mr. Watson, he carried out investigations on the metabolism of rin and, with Mrs. Ellefson, studies on the serum proteins of rabbits. work was again made possible by the continuance of the grant from Hooper Foundation.

The great need of the department is for additional space. The Physi-y Building has, with the expansion of classes, become large enough y for one department. It is impossible to do justice to students under present badly cramped conditions.

Medicine.—With the opening of the University Hospital, the depart-nt has been provided with adequate material for clinical instruction. arrangement of the wards has proved entirely satisfactory. The l-equipped X-ray and Clinical laboratories have permitted much more eful study of patients and much closer correlation of the various thods of examination. Under a staff kept closely in touch with the ivities of the hospital, the Out-Patient Medical Clinic has shown a ge increase in the number of daily visits. The material is carefully ndled and cases in need of special study or treatment are referred to hospital wards for further investigation. The ability to choose terial in this way is of great advantage to the teaching department.

The changes now under way in the Out-Patient Clinic will permit removal of the Tuberculosis Clinic in the near future from down wn to rooms adjacent to the Medical Clinic. For the first time, the es necessary for proper instruction in tuberculosis will be provided d a long-felt want in clinical teaching will be filled.

During the past year, certain schools of medicine have disappeared om the field of medical teaching in the San Francisco Hospital, and magnificent clinical opportunities have been offered the two uni-rsities. This provides 90 beds for the Department of Medicine and 5 for the teaching of chronic tuberculosis. The rearrangement of beds d the closer association of the staff with that of the University spital will permit a different method of clinical teaching in the com-g year, a method which should prove much more efficient and satisfac-y. In the future, whenever possible, a larger budget should be ovided to improve equipment in the laboratories and wards in order put these on a par with the standards of the University Hospital.

In spite of the demands of the war on medical men, the departme has been able to carry on satisfactory instruction and to meet the d mands of increased hospital service. This has only been possible throu the efforts of the remaining staff. Part-time men have devoted mo hours daily to the department and have also assisted various war boar

Eight men left the department in August, 1917, to enter the Unit States armed service. The loss of the full-time men, Dr. Kilgore ar Dr. Whitney, has been acutely felt. There will be urgent necessity f more such men in the future, in order to give the best hospital servi and to develop an efficient resident staff.

MEDICAL PAPERS, July, 1917–July, 1918

DR. HILL

Homeopathy at the University of California. Jour. Amer. Ins Homeopathy, 1918, vol. 10, no. 9, p. 1071.

DR. HURWITZ

The Etiology and Treatment of Hemorrhagic Disease. Amer. Jou Med. Sci., 1917, vol. 154, p. 689.

Intravenous Injections of Colloidal Solutions of Acacia in Hemorrhag Jour. Amer. Med. Assn., 1917, vol. 68, p. 699.

Studies on the Blood Proteins: II. The Albumin Ratio in Experiment Intoxications and Infections. Jour. Exp. Med., 1917, vol. 25, p. 23

Studes on the Blood Proteins: III. The Albumin-Globulin Ratio Antitoxic Immunity. Jour. Infec. Dis., 1918, vol. 22, p. 1.

The Value of Renal Functional Studies in the Prognosis and Trea ment of Nephritis. With Special Reference to the Renal Test Die Calif. State Jour. Med., 1918, vol. 16, p. 287.

The Value of Roetgen Rays and Benzene in the Treatment of Pol cythemia Vera. Jour. Amer. Med. Assn., 1918, vol. 70, p. 1143.

DR. LANGSTROTH

Focal Infection in Chronic Diseases. Amer. Jour. Med. Sci., vol. 15 p. 232, February, 1918.

Treatment and Laboratory Control of Diabetes. Read at meeting State Medical Association, April, 1918. Accepted by Calif. Sta Jour. Med.

DR. LISSER

A Note of the Use of Corpus Luteum to Prevent the Painful Breas of Menstruation. Endocrinology, January-March, 1918, vol. 2, p. 1

Syphilis of the Epididymis without Involvement of the Testicle. R port of a case with Frank Hinman. Amer. Jour. of Syphilis, 191 vol. 2, no. 3, p. 465.

Syphilis of the Lungs. Amer. Jour. Med. Sci., 1918, vol. 65, p. 356.

The Prevention of Congenital Syphilis by Antiluetic Prenatal Therap Read at Meeting of State Medical Association, April, 1918. Cali State Jour. Med., August, 1918.

urology and Psychiatry.—Owing to the absence of three of the ers of this department who are at the front, additional duties have ved upon the two remaining members who do the chief clinical

e work is still largely clinical in character and lacks the finer ela- ion of the laboratory. It is the hope of Drs. Lennon and Harvey in the near future their time may be so arranged that they can lize in laboratory investigation, for which both are fitted by long ng.

sits to the Out-Patient Clinic increased to 7377 during the year, with iew patients. The department has endeavored to give as much as possible to the Indoor Department, and to the San Francisco tal.

. Milton B. Lennon has acted as a member of the Medical Advisory l. Both he and Dr. Richard Harvey contributed papers at the meet- f the State Medical Society at Del Monte, and Dr. Harvey read a d paper at Sacramento. Dr. Harvey in addition to his work in ology, has conducted the work in Serology.

r. Robert Richards has acted as General Director of Psycopathic in the various military cantonments on the Pacific Coast.

r. Podstata gave his regular lectures in Psychiatry, and a special ve course in the Psychoneuroses, which was of an exceptional ard of excellence.

is the sincere hope of the department that with the termination of var an adequate laboratory will be provided, without which it is ssible to do the very best University work in Neurology.

bstetrics and Gynecology.—The year has been spent chiefly in per- ng the organization of our department and in utilizing the equip- of the new hospital. Four thousand eight hundred and fifty am- ory cases have been treated in the Woman's Clinic and the hospital have been kept filled with persons available for teaching purposes. hundred and fifty women were delivered in the Maternity Service out death, while more than 400 gynecologic operations were per- ed by members of the staff, with two deaths. A laboratory tech- n on half time has done much towards relieving the burden of the ne examination of the pathologic material. The follow-up system given a clear insight into the results of clinical work.

great deal of attention has been paid to the teaching of internes, h has been done not only through ward rounds but by weekly staff ings at which all cases discharged during the week were reviewed, a study of histories and of the pathologic material. In as much e department has not yet found a way to increase the number of bers of the staff, the teaching problem remains acute. The department insists that the best results can be obtained only when the san individual follows a case continuously through the clinic, hospital ai for a year after operation. Investigations have been continued the toxaemias of pregnancy and a large amount of material has be studied. Several members of the staff have addressed medical meetin in various parts of the state. During the year, we have used radiu in the treatment of a number of so-called inoperable cases.

Pathology and Bacteriology.—The regular undergraduate course bacteriology was attended by 124 students; of these, 30 received a gra ing of 2 or better, which qualifies them, according to a now well-defin departmental policy, to enter the courses in Medical Bacteriology a Infection and Immunity, for advanced work. The tendency is toward stricter grading and therefore a more rigid selection of students allow this privilege; in 1917, for example, 73 out of 166 qualified. A manu formulating the present status of laboratory instruction was publish in January as one of the University syllabus series and was successful used by the students.

For the first time, an undergraduate research course was schedul in the spring of 1918 to meet the needs of certain advanced studen who have formerly enrolled in graduate research courses. Twelve unde graduate students have undertaken researches during the year.

Fifty-two students were enrolled for instruction in Medical Bacter ology, of whom 20 were in the academic branch. In justification of t more rigid selection recently instituted for non-medical students electin Medical Bacteriology, it is pointed out that there were no failures i this group this year, as contrasted with a failure of 50 per cent la year; furthermore, the distribution of grades among medical and no medical students was essentially the same this year. Five students we enrolled in Immunochemistry, offered by Dr. Schmidt for the first ter

As to graduate research courses, the registration has been necessaril reduced owing to the segregation of undergraduate students. Fi graduate students have pursued special problems during the year und the supervision of Professors Gay and Hall. As usual, such student have come solely from the academic group, and we may well reiterat Professor Gay's criticism of the medical curriculum in that it fails t provide opportunity in the first two years for the development of thos individual viewpoints which are believed to be so important to th successful professional man.

Next year a new course to be known as Anaerobic Bacteriology wi be offered by Professor Hall to advanced students during the secon semester.

Dr. Cooke resigned at the end of the first half year, and Dr. Rus took up his teaching duties. Dr. Rusk has been ably assisted by Mr. G. Delamere, who fills the place formerly occupied by Dr. Rehfisch.

Dr. Gay's absence for the period of the war has left the administra- ve affairs of the department and his teaching duties in the hands of ofessor Hall. A report of the war work accomplished by members of e faculty and the student body is contained in the University War rvice Record, published as a supplement to the President's Report.

Mr. Barnes has nearly completed an exhaustive study of the strepto- cci in which he has shown the correlation of fermentation tests of these ganisms with their serum precipitin reactions.

Miss Juanita Van Meter, in collaboration with Professor Hall, has mpleted a thorough study of ''The Bacteriology of Peanut Butter and e Germicidal Action of Arachis Oil,'' showing the freedom of com- ercial peanut butter from colon bacilli and intestinal pathogens in ite of rather obvious opportunities for bacterial contamination.

Dr. Takeoka has continued his study of experimental tuberculosis in boratory animals.

Through action of the Advisory Board of the Medical School the epartment of Pathology and Bacteriology is to be divided after July 1, 18, into separate departments for the period of the war, with Professors usk and Hall as respective acting heads. It is hoped that this step ay be one which will lead to a solution of the serious problem of conges- on which confronts the Bacteriological Department. The capacity of e laboratory is limited to 60 students and will just accommodate the coming medical class without any opportunity for non-medical students advanced courses. The immediate removal of the Department of athology to San Francisco so that the laboratory space may be made ailable for non-medical instruction, and the small rooms now occupied the Pathology staff may be available for the increased number of search students, is urged by Professor Hall.

Pediatrics.—The declaration of war by the United States brought any changes. On the 1st of July, the head of the department, Dr. Lucas, ft for France to take charge of the Children's Bureau for the American ed Cross. At this time there were 10 assistants and internes on the inical staff; on January 1, 1918, of this number only four remained. has been impossible to fill all of these vacancies. As no internes were vailable it became necessary to appoint four senior students as students residence in the hospital. Dr. Florence M. Holsclaw and Dr. Ellen S. tadtmuller were added to the clinical staff. Further to facilitate ward ork, a laboratory technician was added.

The new hospital was opened in August and there are now available the pediatric unit 40 beds for medical, and 10 beds for surgical, ases. In addition, with the continued coöperation of Doctor Lynch, ead of the Women's Department, the Children's Service has the medical pervision of the newborn. The quarters in the new hospital have been much appreciated both by instructors and students, because of the cellent arrangements for clinical teaching.

The Out-Patient Clinic has been under the direction of Dr. E. Fleischner, with Drs. A. E. Meyers, Florence M. Holsclaw, Ellen Stadtmuller and W. A. Woods as assistants. There have been 9856 vis to the clinic during the past year, a slightly smaller number than f the same period of the preceding year. This is due to several caus the disorganization of the staff caused by the war; a prolonged stre car strike, and especially to the lack of accommodations for patien This last condition will be remedied only when new quarters will available in the Medical School Building. More space is absolut necessary to enable the clinical staff to give students greater clinic advantages.

The Pediatric Department of the Children's Hospital was utiliz during the first semester for bedside teaching and during the seco semester for the demonstration of selected cases to those fourth-ye students who elected pediatrics.

During the 10 weeks of pediatric service at the San Francisco H pital, groups of third-year students were assigned to Doctor Fleischn

The medical supervision of the Juvenile Court has been continued th year with some difficulty, because of the large service that had to rendered by a limited staff. Psychological examinations of the wards the Court have been made by Dr. Bridgman, and by the members of h class in Philosophy 143, under her supervision. Mental examinations selected cases from St. Catherine's Home, the Roman Catholic Orphana Berkeley Dispensary and from two of the Berkeley Public Schools, we also made by these students. Dr. Bridgman has coöperated with t Bureau of Venereal Diseases of the State Board of Health in maki mental examinations of special cases and in lecturing on mental deficien and its relation to venereal diseases in San Francisco and various oth cities and towns throughout the state.

The Medical supervision of the San Francisco Nursery for Homel Children has been in charge of Dr. Ellen S. Stadtmuller.

In February of this year the Protestant Orphanage, an institution which about 125 children are enrolled, was placed under the medic supervision of the department.

All these affiliated institutions contribute valuable teaching cas to the department and give it the opportunity of assisting in ch welfare work.

Several papers have been published by members of the departme during the past year. Dr. Lucas sent an interesting report on "Wo of the Children's Bureau, Department of Civil Affairs, American R Cross, France." Eight other papers have been published by Doct Fleischner, Bridgman, Watters and Ash. The department was well rep ıted at the meeting of the State Medical Society in April, and Doctors cas and Fleischner presented papers on "Diseases of Children" at the ıerican Medical Association.

The clinical staff is by no means complete nor will it be possible to it as the staff lists of other hospitals and clinics in San Francisco d elsewhere are similarly depleted. All the members of the Pediatric partment have worked to their maximum capacity in order to replace far as possible those who are now absent in their country's service.

Physiology.—All members of the staff of this department have been on ty throughout the year; they have faithfully performed their teaching actions and all have been actively engaged in research work.

The crowded condition of rooms mentioned in the last two reports s remained acute.

The total number of student registrations for the year has been 499. is probable that the demands upon the department will be greater the coming year.

Surgery.—With the opening of the new University Hospital, the work the Surgical Department has very materially increased. The beds ailable for this department, with its subdivisions of Orthopedics, ology, Ear, Nose and Throat, and Eye, are 76. Of these, Surgery has beds.

Sufficient time has elapsed to demonstrate that the new hospital is every way an unqualified success. The accommodations for patients e excellent and the operating unit is well designed and thoroughly uipped. It needs, however, but a short glimpse into the future to resee an over-taxing of capacity and the need for at least double the esent bed accommodations.

Fifteen of the staff out of a total of 38 have gone into the army or to other government service. The department has lost through death a lued instructor, Dr. Fayette W. Birtch, who had been giving important ırd instruction.

The Out-Patient Department has progressed satisfactorily, but the nited personnel has made it difficult at times to handle all the applicants.

The assignment of Medical Officers of the United States Army for ecial training has necessitated additional teaching hours on the part a number of instructors, but the work has been most cheerfully done.

LOS ANGELES MEDICAL DEPARTMENT

Los Angeles, July 1, 1918.

To the President of the University,

Sir: I have the honor to submit herewith the report of t Los Angeles Medical Department for the year 1917–18.

The Los Angeles Medical Department, in its function as school for graduates of medicine, gave instruction during t last year to more than 60 matriculants. The work of the depar ment has gone steadily forward and the training given has e abled many of these licensed practitioners of medicine and su gery to do their daily work in better fashion than heretofore.

The war has caused a number of changes in the teaching sta many of the younger men having gone into the service. A lar percentage of the alumni of this department have gone into t Medical Reserve Corps.

The facilities of the institution have been placed at the di posal of the government from the beginning of the war. Th Aviation Examining Unit for the Pacific Southwest was esta lished here. Captain Bowman used the facilities of instructi to train medical officers who were being fitted as specialists X-Ray work. Lieutenant Wilson gave training to medic officers in Orthopedic Surgery.

The second floor of the hospital building has been given ov to the Medical Examining Board of the Southern District, an the facilities of the institution are much appreciated by the e aminers. It is hoped that the department can continue to be similar service in other lines, and to take an active part in th reconstruction work which is ahead of us.

During the last year, the Uplifters Club of Los Angeles doated $1100 to better equip the first floor of the hospital buildng, so that children operated upon could be better cared for.

The students who have matriculated have expressed their leasure and appreciation of the opportunities for work which ere placed at their disposal.

It is the desire of the teaching staff to make these facilities nd opportunities constantly better and greater.

Respectfully submitted,

George H. Kress,
Dean.

CALIFORNIA COLLEGE OF PHARMACY

San Francisco, July 1, 1918.

To the President of the University,

Sir: I have the honor to submit the following report of th College of Pharmacy for the year 1917–18.

The year has been marked by unrest, due, of course, to th great war. Small groups of our students have enlisted and individuals have absented themselves from their classes to appea later in the training camps and stations of the Army and Navy A service flag with its 91 stars tells of our students and graduate who have entered the service, as did many of their ancestors.

Owing to the dearth of graduates, vacancies have occurre in the pharmacies of the Pacific Coast, thereby placing eve greater responsibility upon our undergraduates, who may b actively employed in filling the places which were formerly occupied by older men who have now joined the colors.

The Board of Directors has experienced a serious loss in th death of Mr. Richard E. White after years of long and faithfu service as director and treasurer. The Board has been muc gratified by the return to San Francisco of Mr. John H. Dawson who has recently been re-elected to the directorate.

With respect to our financial condition, it is gratifying t state that the college owes nothing and has a moderate reserv set aside for just such lean years as this great war has brough upon us.

Respectfully submitted,

Frank T. Green,
Dean.

UNIVERSITY OF CALIFORNIA PRESS

Berkeley, July 1, 1918.

o the President of the University,

Sir: I hereby respectfully submit the following report for the niversity of California Press for the year 1917–18.

The busiest year the office of the University Press has exerienced closed on June 30, 1918, leaving for its successor the rospect of an equally interesting period in 1918–19. The publishing activities of the University in these two years will have oncerned themselves with the production, in addition to the stablished series publications, of a series of works issued in ommemoration of the Semicentenary of the University of California. The history of these publications begins in 1912 when he President of the University suggested the appropriateness f such a manner of celebrating the University's fiftieth birthlay and recommended consideration of the matter by the Ediorial Committee of the Academic Senate, the advisory body for he University Press. The President's suggestion was adopted nd careful thought was given to the carrying out of the project. The character and scope of the contributions that would be aceptable were presented to the attention of the members of the University. The years between the inception of the plan in 1912 and the appearance of the first of the volumes in the year 1918 have witnessed much labor and some disappointments, but in the year just closed some noteworthy volumes have been published, and the coming year will add many important works to the list. The titles of the twenty volumes that have thus far been issued by the University Press itself and in the publishing trade, are as follows:

C. H. Rieber: Footnotes to Formal Logic.

E. P. Van Duzee: Catalogue of the Hemiptera of America North c Mexico, excepting the Aphididae, Coccidae and Aleurodidae.

G. M. Stratton: Theophrastus and the Greek Physiological Psycholog before Aristotle.

W. Westergaard: The Danish West Indies under Company Rule (1671 1754), with a Supplementary Chapter (1755–1917).

R. Gittinger: The Formation of the State of Oklahoma (1803–1906).

H. E. Cory: Edmond Spenser—a Critical Study.

C. G. Chinard: L'exotisme américain dans l'oeuvre de Chateaubriand.

W. M. Hart: Kipling the Story Writer.

W. A. Merrill: Lucreti De Rerum Natura Libri Sex.

G. R. Noyes: Pan Tadeusz; or, The Last Foray in Lithuania—a story o life among Polish gentlefolk in the years 1811 and 1812, by Adai Mickiewicz.

G. R. Noyes: Plays by Alexander Ostrovsky—A Protegee of the Mistres Poverty is No Crime, Sin and Sorrow are Common to All, It's Family Affair—We'll Settle it Ourselves.

G. R. Noyes: Tolstoy.

Bioletti, Cruess, and Davi: Changes in the Chemical Composition o Grapes During Ripening.

M. Krunich: Serbia Crucified.

C. M. Gayley: Shakespeare and the Founders of Liberty in America.

A. W. Ryder: Twenty-two Goblins.

F. Slate: Fundamental Equations of Dynamics.

T. B. Robertson: The Physical Chemistry of the Proteins.

R. C. Tolman: The Theory of the Relativity of Motion.

F. P. Gay: Typhoid Fever, Considered as a Problem of Scientific Medicine

To give a more detailed statement of the year's work, ther have been published during 1917–18 under the supervision of th University Press, excluding bulletins and circulars of the Agri cultural Experiment Station, four issues of the *University o California Chronicle* (577 pages), Syllabi (1117 pages), th Bulletins of the Lick Observatory and the Berkeley Astronomica Department (76 pages), and Weinstock Lectures (245 pages) in addition to 90 titles, 9196 pages, and 126 plates, appearing ir various of the 24 established series of publications of the University. In final page proof and ready for the presses are som 3000 pages (16 titles); about 1600 pages are carried over t 1918–19 in various stages of manufacture (about the sam amount of work was carried over from 1917–18) and there are

hand on July 1, 1918, 35 untouched manuscripts with many
lditional manuscripts promised by August 1. Of the work
sued, 77 publications, comprising 5156 pages and 126 plates,
ere manufactured by the University Printing Office—an increase
very nearly 40 per cent over the average product for the
st five years. Of the remaining 13 titles, two were printed
r the University Press by private publishing firms; the remain-
g 11 were manufactured for the authors by publishers in the
ade and 250 copies of each purchased by the University for in-
lusion, in a special binding, in the Semicentennial Series. The
tal number of pages issued as semicentennial work is 6390—
bout two-thirds of the year's production. Of these, however,
125 pages belong also to the established series; the addition to
e University's regular publications is, therefore, 4931 pages,
xceeding thus the rate of growth of the better years in the
istory of the Press.

A serious problem confronts the University Press in the
roper preparation and manufacture of the material submitted
or illustration in the publication series. During the past year
he Editorial Committee has given much time to the considera-
ion of the question of securing a permanent paper stock to be
sed for the printing of certain plates to appear in a large and
mportant scientific work. The coöperation of the United States
ureau of Standards, and of a number of the leading paper
anufacturers of the United States was enlisted, and the Uni-
ersity Press is now planning to issue during the coming year,
n the semicentennial series, a quarto volume in which the plates
ill be printed upon what promises to be a permanent paper.
areful thought is also being given to the formation of some
lan through which, with the coöperation of editors, and of the
uthors of contributions submitted for publication in the Uni-
ersity series, it is hoped that the proper preparation of copy for
llustration may be secured. The engraving work completed and
nder way at this time is both of unusual amount and of excep-
ional quality owing to the demands of certain semicentennial
publications. The amount spent on engraving work in 1917–18
was $3694.28.

Attention should be drawn to the Syllabus series, the us fulness and extent of which are constantly growing. In tl Syllabus series during 1917–18, 12 syllabi were issued, totalin 1117 pages, selling at prices ranging from twenty cents to tw dollars. This does not include the syllabi issued in mimeograp form.

The mailing department of the University Press deserves word. It is very seriously hampered because the space no devoted to it in the printing office building is inadequate, n only for the handling of incoming publications and the despatcl ing of mailing lists but also for the storing of even a curren supply of stock. Upon even this limited space the printin office has been steadily encroaching, and it must be admitted th needs of the printing plant justify the incursion. The amount c work performed in the mailing room is constantly increasin The filling of the daily orders for sales of publications; the dis tribution on regular mailing lists and on miscellaneous calls the wrapping and storing accompanying the making up of th separate numbers into sets of complete volumes upon issuanc of title page and index; the annual stock-taking; the clerica work in the keeping of the stock record sheets for the individua publications and the exchange distribution records; the worl done for other departments—all make up a variety of detaile tasks, and the lack of proper facilities for handling the work an for even the proper filing of records places great difficulties i the way of the Press.

In November, 1916, the University of California Press wa invited to join with other university presses in the experiment o maintaining in New York City a joint agency for the handlin of the publications of university presses, the expenses being gen erously borne by the Yale University Press and the Harvar University Press. Under the name "The University Press Asso ciation" this office was opened and its operation has brought t our publications the important advantages of having a represen tative stock of *University of California Publications* assemble in New York, accessible to prospective customers for examination Thus a prompt delivery of the orders received in the east is

ossible. These advantages are particularly important because
our location.

The advertising of the University Press this last year was
lanned with a view to bringing to the notice of a selected public
ecific papers or volumes in the hope of arousing a particular
terest and demand. The media of advertisement have been
andard journals. Returns from advertising are hard to deter-
ine, but we feel that we are able to discern a distinct connec-
on between the advertisement and the sale orders and requests
r lists of our publications that are received. The amount of
oney that was expended for advertising is $270.61.

The University Press has already been affected by the war.
t the bottom of the Atlantic Ocean are today manuscript and
roof from Leiden, The Netherlands, where the publishing firm
The Late E. J. Brill, Ltd. is printing a paper in Arabic for
r Semitic Philology series. We know that at least one tor-
edoed vessel carried several packages of University of Cali-
rnia publications to addresses in Europe, largely in Great
ritain and Ireland. How many others of our volumes have been
st, is unknown. Some of our sister institutions have suspended
tirely the distribution of published material until safer passage
ay be expected. The Smithsonian Institution, however, is still
cepting shipments of publications for distribution to a re-
ricted number of foreign countries. The shipment of Univer-
ty publications made up this past year for distribution to
reign exchanges contains, besides administrative and agricul-
ral bulletins, 62 titles, representing 10 series, and is being sent
some 300 addresses outside of North America. This small
umber of addresses (only about 50 per cent of the normal num-
r) indicates the extent to which the war has affected the dis-
ibution of printed material.

Respectfully submitted,

MORSE A. CARTWRIGHT,

Manager.

Series	Papers		Pages		Plates	Exper tures
Agricultural Sciences	8	(9)	147	(28)	12	$899.
American Archaeology and Ethnology	8		468		38	2,348
Botany	2		93		5	546.
Classical Philology	4	(5)	187	(258)		679.
Economics	2		250			600
Engineering	2		60			327
Entomology	2	(3)	66	(916)		231
Geology	12		289		28	1,818
History	1	(2)	73	(268)		461
Memoirs (binding)						146
Modern Philology	1	(2)	152	(478)		391
Philosophy		(1)		(177)		19
				2,125		
Physiology	1		12			75
Psychology	1		59			193
Bulletin of the Seismographic Stations	2		52			260
Zoology	24		898	2,806	43	4,197
	70	(76)	2,806	4,931	126	$13,196
Semicentennial Publications	20	(14)	6,390	(4,265)		14,340
	90		9,196	9,196	126	$27,537
Lick Observatory Bulletins	15		76			
University of California Chronicle			577			1,302
Syllabus Series			1,117			1,611
Total expended on publications						$30,451
Office expenses, assistance, postage, supplies, etc.						$ 5,231
						$35,683

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* "Expenditures" does not mean the cost of the particular papers enumerated h but the money spent on the series named—in part on papers not yet published. P of the cost of the papers published this year was paid out of funds of the year bef

RECEIPTS FROM SALES OF PUBLICATIONS, 1917–18

gricultural Sciences	$38.15		
nerican Archaeology and Ethnology	117.50		
tany	31.20		
assical Philology	40.79		
onomics	73.24		
lucation	90.56		
gineering	32.70		
tomology	200.03		
ography	8.68		
ology	146.23		
istory	239.21		
athematics	.20		
emoirs	160.25		
odern Philology	74.43		
thology	.20		
ilosophy	7.56		
ysiology	17.75		
ychology	23.66		
ismographic Bulletin	.45		
micentennial (Tolman)	2.62		
ology	161.63		$1,467.04
niversity of California Chronicle		$49.33	
llabi		2,070.13	
ndries		20.53	2,139.99
gyptian Archaeology		$12.00	
ick Observatory Bulletin		46.75	
ick Observatory Publications		12.72	71.47
ibrary Bulletins		$7.30	
ublications of the Academy of Pacific Coast History		36.28	43.58
dministrative Bulletins		$0.75	
nnouncement of Courses*		294.32	
raduate Announcements*		.10	
fficers and Students*		185.11	
egister*		2.40	
mmer Session*		.10	482.78
niversity Calendar		$100.65	
nglish in Secondary Schools		10.71	
tate Geological Survey		10.50	
einstock Lectures		125.61	
e		29.40	276.87
			$4,481.73

*Does not include sales through the Recorder's Office.

SCRIPPS INSTITUTION FOR BIOLOGICAL RESEARCH

La Jolla, California, July 1, 1918.

To the President of the University,

Sir: I present herewith my report for the year July 1, 191 to June 30, 1918.

It will be advantageous to divide the report this year in two main divisions, one dealing with the usual, or regular wo of the Institution; the other with its special, or war work.

Regular Work

Oceanographic.—In view of the possible significance, as inc cated by last year's observations, of temperature and other da pertaining to the sea-water, for "long range" weather and oth kinds of forecasting, special attention has been given this ye to data-collecting, both from the pier and on the weekly ar monthly boat trips. Temperatures of air as well as of wat have been taken. Dr. McEwen has been ably assisted in the tim consuming work of specific gravity and other determinations l Mr. N. W. Cummings, a graduate student and voluntary assis ant in physics. Mr. Cummings also has developed a shorter w of making computations and has improved the method of measu ing the specific gravity of sea water.

The weekly boat work consisted of visits to a stati fifteen miles west of La Jolla. The monthly cruises have be over the same course, as closely as possible, from San Pedro a point about 50 miles west of San Nicolas Island, returni directly to San Diego. The purpose in these series is to get information on the seasonal variation and succession of both oceanographic and biologic conditions.

The work on problems of oceanic temperatures and circulation, referred to in previous reports has been critically reexamined and extended, the results being now embodied in an extensive paper, "*Ocean Temperatures, Their Relation to Solar Radiation and Oceanic Circulation,*" by G. F. McEwen, to be published as one of the Semicentenary Publications of the University.

Plankton Work.—It was Professor Kofoid's expectation to complete this year the first of the three parts of his monograph on the *Dinoflagellates,* dealing with the *Gyannodinionidae.* The magnitude of the task of describing adequately the seemingly infinite wealth of details presented by these microscopic organisms is indicated by the fact that this first division of the monograph will treat of more than 350 species and 45 genera. Had not Professor Kofoid entered the army to take charge of hookworm work for the medical department, we should undoubtedly have had the satisfaction of seeing this part of his monograph in print soon. His complete severance from the work leaves it in the hands of Dr. Swezy, and it is hoped that her long service as Professor Kofoid's assistant and collaborator will enable her to bring this division to a conclusion by the end of the year. In view of the uncertainity as to when Professor Kofoid will be able to resume his regular duties, and as to the work of the Institution in the immediate future, because of the war, it seems best to let the publication of the part of the monograph now nearly completed mark a temporary interruption of this investigation. It must, however, be understood that the interruption is indeed temporary. The undertaking is too fundamental, both from a scientific and economic standpoint, and has been carried too far to permit any thought of leaving it partly done, even though the labor and expense of completing it will be great. In view of these conditions, Dr. Swezy's connection with the work and with the Institution terminates at the end of the year.

Practically all the work in marine biology, except that on th Dinoflagillates, is now subordinated, in one way and another, t fisheries problems, further general mention of which is mad under the head of war work of the Institution.

Dr. Esterly's general paper, "*Field Research and Laborator Experiment: Their Places in Ascertaining and Explaining Habi in Nature*" (Bull. No. 4, Scripps Institution) has attracted atter tion both from the standpoint of subject matter and that c methods employed.

Investigations on Heredity and Environmental Influence.– The investigations by Dr. Sumner, assisted by Mr. Collins, hav progressed notably during the year in several ways. The rigo ously scientific collecting and field studies being carried on a several strategic localities in California, where different sul species, or races of the group of mice, the "white footed mice,' occur is certainly throwing new light upon the subject, still ol scure in spite of the great attention it has received, of the exist ence and distribution and formation of new kinds of highe animals. That groups of animals as high in the scale as mic differentiate into sub-groups in localities not isolated from on another more than are Fort Bragg, Duncan Mills, and Calistog is certainly an important fact of organic evolution, whatever b its explanation. And it becomes all the more interesting whe viewed together with the fact of local differentiation of languag at least, among the Indians of California. Deserving of mentio in connection with these researches is the methodological fac that without the application of the most careful measurement which can be made, and statistical methods, the group difference could not be detected, though unquestioned when these method are employed. The preparation and measurement of 1500 skele tons in one batch indicates something of the laboriousness o such studies.

On the genetic side, interesting results continue to be reache from crossing wild races and mutants; on the appearance o mutants; and on Mendelian inheritance.

The general paper by Dr. Sumner, "*Modern Conceptions o Heredity, and Genetic Studies at the Scripps Institution*" (Bull cripps Inst. No. 3) is being rather widely called for. Dr. Sumner has entered the lists'' with the medical profession in the effort o stem the current now becoming dangerously strong in Caliornia, against animal experimentation. It appears that this ubject will have to be dealt with on broader principles than hose of medicine and sanitation, important as these are. The ddress given by Dr. Sumner at the Academy of Sciences in an Francisco, and to be published soon, is in this direction.

The work of instruction due from the Scripps Institution to he Department of Zoology at Berkeley was given this year by r. E. L. Michael, the desire being to have other phases of the nstitution's activities represented than those with which the cientific Director, who alone has heretofore given the courses at he University, is professionally identified. Unfortunately Mr. ichael was not able to carry his course quite through the semster owing to illness; but the plan of wider representation of the nstitution's work at Berkeley is undoubtedly sound, and it is oped can be carried out.

The only two scientific members of the Institution subject to raft for the army, Mr. Frank Thone, Assistant and Secretary o the Director, and Mr. N. W. Cummings, Voluntary Assistant n Oceanography, have been taken from the Institution to enter he service.

During the year, the Scientific Director has brought to completion and placed in the hands of the publisher three books, '*The Higher Usefulness of Science and Other Essays*''; ''*The Unity of the Organism or the Organismal Conception of Life*''; and ''*The Probable Infinity of Nature and Life.*''

War Work

The definitive war work of the Scripps Institution is connected with the kelp and fishing industries of the California coast.

Kelp Industry.—The Institution's function in this industry is to furnish the State Game and Fish Commission information and advice based on scientific inquiry, as to when the different kelp beds shall be declared ''open'' and when ''closed,'' i.e., when they may and when they may not be harvested, the Com mission being empowered by law to make and enforce the regu lations.

The requisite information is obtained by general and specia inquiry. General inquiry consists in rather frequent general ex aminations of the "beds" to ascertain the state of growth, abund ance, health, and so on, of the plants. Special inquiry consist in botanical studies on the plants, such problems as their sporu lation, embryogeny, bacterial infection, etc., receiving attentior The work is in the immediate charge of Mr. W. C. Crandal The botanical investigations are being performed by Dr. R. F Brandt.

The rather elaborate scheme of dividing the entire kelp are into numbered units and securing a "gentleman's agreement" among the harvesting companies as to which shall cut in differ ent places is largely due to Mr. Crandall. Funds for prosecut ing this work are derived from a state-imposed tonnage tax or the wet kelp harvested, the proceeds being allotted jointly to th State Game and Fish Commission and the Scripps Institution.

Fishing Industry.—Work of the Institution in this field is o several kinds, which may be classified according to the agencie by which they are carried on.

(1) The Institution in coöperation with the United State Bureau of Fisheries.

During and for sometime after the fishing season of 1917 "experimental fishing" was done for the purpose of ascertaining more definitely than the industrial fishing has determined, the area over which "tuna" (the long-finned albacore) may be obtained; where these fishes go when they leave the fishing area in the fall; and other matters involving the distribution and life habits of the fish. The aim of this work was to get information which would enable the fishermen to ply their vocation more effectively and increase the output.

Also in connection with the Bureau of Fisheries, a report is being prepared on the relation of the fishing done in waters under the jurisdiction of the United States to that done in waters f Mexican jurisdiction and influence. The aim of this study to ascertain the relative amounts of fish taken under the two urisdictions and from the high seas; conditions as to concessions or fishing in Mexican waters, and as to fees and other charges xacted by the Mexican government and Mexicans; and other matters affecting the industry and international relations in this uarter.

The Bureau of Fisheries furnishes the money expended irectly on these inquiries, the Institution contributing certain acilities, and some labor of its scientific staff and workmen. he scientific director of the Institution has been appointed Director of Operations by the Bureau for its work in this region, nd Mr. W. C. Crandall, its special agent for certain purposes.

(2) The Institution in coöperation with the United States Bureau of Chemistry and the Federal Food Administration.

The work here consists of experiments on methods of preserving fish, other than canning. Smoking, kippering, dry-salting and brine-salting are being tried, and various species of fish are tilized, special attention being given to sardines too large for anning.

The Bureau of Chemistry has assigned an expert, Mr. Horace Davi, to this work. The Institution provides laboratory and other facilities, and the fresh fish, in part, used in the experiments.

(3) In coöperation with the Council of Defense of California.

The problem undertaken in this connection is that of bringng the Institution's programme of research on the "plankton" as the fundamental food supply of commercial fishes, and on the hydrography of the fishing area, as part of the environment of the fishes, into the service of the fishing industry. The aim here has been two fold: the possible increase of productiveness of the industry; and the furnishing of information on which to base regulative and protective measures for the industry. The funds supplied by the Council of Defense for this work during the last year will not be continued next year, but the Institution plans to keep up the investigations in part, at least, on its own account.

(4) Perhaps the most important of all, is Mr. Crandall services as Fish Administrator for southern California under tl National Food Administration. This responsible position absorl the major part of Mr. Crandall's time, and the Institution obliged to adjust its affairs accordingly, which it does ver gladly.

Respectfully submitted,

William E. Ritter,
Director.

SUMMER SESSION

BERKELEY, July 1, 1918.

o the President of the University,

SIR: The plans for the Summer Session had been completed
fore the breaking off of diplomatic relations with Germany;
e Bulletin had been published before the declaration of war.
eyond the addition of a few war-time courses, special adapta-
on of the session to the needs of the moment was therefore im-
ossible. Our students, however, seemed to take the view that
n increase in personal efficiency might add to the general effi-
ency of the nation; the total enrollment was 3979, or four more
an that for 1916. Of this number, 917 were men, a loss of 273
s compared with the previous year, and 3062 were women. To
e total enrollment should be added the 524 students of the
pecial term, May 21 to June 23, 1917, dealt with in my last
eport.

The distribution of enrollment among the various depart-
ents was not markedly different from that of 1916. In gen-
ral, the more practical subjects gained somewhat at the ex-
ense of the humanities, and courses of interest mainly to men
howed a certain decrease; but the differences can be accounted
or largely on the basis of the popularity of certain courses or of
ertain instructors. The marked increase in registration in
ommerce, Criminology, and Public Health is, however, signifi-
ant of a real shift of interest.

Coöperation with the University of Southern California was
he important innovation of the year. This had presented itself
s the best solution, for the time being, of the problem involved

in the attempt of the Summer Session to serve our two large a widely separated centers of population. In the southern part the state, students have been obviously at a disadvantage; a the general public has been denied the privileges which t presence of a Summer Session brings with it. The southe section of the California Teacher's Association and individu interested in higher education had, in 1916, requested the esta lishment of a branch of our Summer Session in southern Ca fornia. The request came too late for action in that year. 1917 it was thought that the needs of the south could best be m by strengthening the growing institution already established the University of Southern California. Accordingly, Profess Richard G. Boone of the Department of Education, Dr. Fra Schneider of the Department of German, and Professor Perha W. Nahl of the Department of Graphic Art, accepted invitatio to become for six weeks members of the faculty of the southe university. It was hoped that this migration of instructo might be the beginning of a larger coöperation, which might time meet the needs and wishes of students and public.

In November, 1917, an informal meeting of administrati officers of summer schools was held at the University of Michiga Invitations had been sent to all universities offering gradua courses in the summer school. Matters of common interest we discussed, a questionnaire was drawn up and sent out, an statistics collected. From these latter it appears that the Un versity of California is the only state institution whose Summ Session income is not less than its budget. Some of the figur are interesting: Indiana University, with 959 students, incurs deficit of $18,500; Illinois, 833 students, $23,000; Kansas, 73 students, $20,000; Michigan, 1453 students, $35,000; Montan 280 students, $9500; Pennsylvania, 853 students, $10,000; Was ington, 1213 students, $21,500; Wisconsin, 2334 students, $19,50

In my last report, attention was called to the inadequacy o our summer session salaries. In view of the increased cost o living and of travel, and of the decrease in the general purcha ing power of money, salaries are no longer a proper return fo the services rendered. They work an injustice upon member the faculty who teach during the summer because of a sense duty to subject or department or to the University, or because the necessity of increasing an inadequate income. An increase the tuition fee does not seem advisable under war conditions, hen students also are affected by increased prices. What is esirable, however, is a liberal appropriation conforming to the ustom of other state universities, instead of depending upon the enerosity of members of the faculty.

Respectfully submitted,

WALTER MORRIS HART,
Dean.

WILMERDING SCHOOL

SAN FRANCISCO, July 1, 1918.

To the President of the University,

SIR: I submit herewith my annual report as Director of tl Wilmerding School for the year 1917–18.

Twelve months of war have exposed to a searching scrutir everything of consequence in the American commonwealt schools included. This being a war of science and mechanic skill, the technical and industrial schools have been looked t for a favorable accounting of the important stewardship wit which they have been entrusted during recent years. Ui doubtedly the war will bring about some extensive readjustmen of the American school system, and fortunately it happens th the Smith-Hughes Bill, with its generous appropriations for th promotion of industrial, household and agricultural educatio and the training of teachers along those lines, is being put int operation at this particular time. The far-reaching experiment that will be carried on under this fund will be both timely an valuable, and the results will go far towards defining the plac of the industries in education, and unifying our school system i general.

Any changes that may come are likely to be of considerabl concern to the Wilmerding School. In previous reports I hav emphasized the idea that the Wilmerding School, being an endowed institution with an income sufficient to make it independent of its clientage, should be kept on the frontier of industria education. The Smith-Hughes Bill is intended to serve a simila purpose, with a nation-wide scope but only for a limited perio f time. When it has finished its work it will have consolidated e ground covered up to that time, but the schools having peretual endowments will still be left to do the pioneering.

The Lick-Wilmerding enrollment for 1917–18 has been 451 oys, and the enrollment of girls in the Lux School, with which he Lick and Wilmerding schools are associated, has been 238. ur senior class has been reduced somewhat by the war, but the ower classes have not been disturbed to any appreciable extent.

Respectfully submitted,

George A. Merrill,
Director.

DEAN OF WOMEN

Berkeley, July 1, 1918.

To the President of the University,

Sir: I have the honor to present the following report of th work of the women of the University for the year 1917–18.

The average number of undergraduate women attending th University during the year was 2448. Although the rate o increase in the number of women entering the University, fo the first time, fell below that of former years, the total enrollment of undergraduate women reached its maximum.

The realization that now of all times, trained women are needed and that colleges and universities are the places where they should be trained, together with the growing demand for women's services, has furnished the inspiration for the year.

It is not easy to feel the joy of sacrifice and service in pursuing the humdrum routine of education while men are called out to practice new arts, to manage machines more powerful and complex than the world has ever seen and to give their lives for their country. But the women of the University have been faithful to the task imposed upon them. Their usual work has taken on new value. Hygiene and physical education grow in importance with the obligation to maintain a high standard of health. Student government becomes a practical experiment in reconciling liberty and loyalty, and intellectual curiosity, stimulated by the war, provides a clear purpose for the study of the humanities. While some indifferent individuals have escaped this quickening influence the majority have eagerly responded.

There have been from time to time restlessness and complaint that the road was long and tedious. One hundred and twenty-ee women were granted leaves of absence to take up various upations. Fifty-nine more left the University to go into hnical schools, twenty-five of whom entered secretarial schools. the whole, however, ambitious women have learned by degrees it the war is not making easy opportunities for them and that re are few short cuts across long and thorough training for il service.

As advisors, the staff of this office have endeavored to direct idents into lines of study whch would best fit them to meet the ture demand for trained women. To students who could not dertake the longer professional curricula and who were seek- other avenues than teaching, it was possible to offer varied portunities for training in public health, dietetics, household inagement, social work, statistics, scientific work, business and retarial work, agriculture, etc.

An important addition to the opportunities for training men is the curriculum for nurses, introduced this year. This rriculum provides for three years of study in the academic partments of the University, followed by two years in the iversity Hospital Training School. On the completion of the e-year course, the student will receive the bachelor's degree d the recommendation for the state examination for a cer- icate as registered nurse.

To keep the need for trained women before the undergrad- tes, the women of the senior class asked that a series of lec- res be arranged on vocations for women other than teaching. ginning early in the spring term and occurring twice a week, lectures were given by men and women distinguished in differ- t fields. The topics included public health, law, social work, tistics, scientific work, architecture, agriculture, business, office ministration and mercantile pursuits. New aspects of women's rk created by the war were emphasized throughout. A con- ence with the speaker followed each lecture.

While the education of the undergraduate must go steadily , the progress of the war is developing the need for short ensive training for women in the special application of their evious education and experience. Women who have been

trained in physical education may become reconstruction ai
and share in the work of restoring the wounded man to his gre
est efficiency. Those trained in manual arts and design m
become teachers of occupational therapy and assist in the fi
stages of the reëducation of the wounded man for work. Wom
trained in scientific work may become laboratory technicia
Others with fundamental training in agriculture may beco
leaders of groups of women working on farms or in orchar
and assist in meeting the shortage of farm labor. Women
general education and experience may become special work
and deal with the various social problems which the war is bri
ing to every community. Graduates of colleges and universit
who wish to become trained nurses but have not had the scienti
and social subjects required by the training schools for admissi
to a course of two years, may bridge the gap by an intensi
course of study. All these demands for special training ha
been met through the organization of short courses of from s
to twelve weeks duration in the Summer Session of the U
versity, at the University Farm School, or at the Universi
Hospital. In fact, only two of the many opportunities for trai
ing offered to women by the different universities and colleg
of the country have been overlooked by the University of Ca
fornia. It is now proposed to add the remaining two—traini
for psychiatric social work and for employment managers—du
ing the coming term.

Although the average undergraduate student has respond
well to her refocused college work, she has also felt the ne
of sharing in specific war work. The Department of Hygie
lent its aid by giving courses in First Aid and Home Care of t
Sick. The purpose of this instruction is to give women skill a
confidence in handling the emergencies of minor illness and ac
dent. In this way trained nurses in every community may
freed for the critical needs of war time. One hundred seni
women registered for the work.

At the suggestion of the Federal Food Administration, t
Department of Home Economics also offered courses in speci
war-work. The purpose of these courses was (1) to inform a

ollege women of the food problems created by the war, (2) to ain women in food conservation and the use of substitutes in he household, and (3) to equip specially qualified women to ecome community leaders in food conservation. Six hundred omen were registered.

Besides enrolling in these regularly organized classes, the omen have entered into the local campaign for food conservation. The coöperation of all fraternity, club and student boarding houses has been secured. From time to time, Dr. Morgan f the Department of Home Economics has conferred with tudent managers and heads of boarding houses to advise and elp them in the preparation of food conservation menus.

During the year, 1500 women have rendered some service reat or small through the University of California Auxiliary f the Berkeley Chapter of the American Red Cross. The uxiliary was organized by the Associated Women Students. In he work rooms in Hearst Hall, knitted garments, hospital garments, childrens' clothing and surgical dressings were made by he students under the supervision of faculty women who have iven generously of their time.

The women also shared the work of the National Service Committee of the University in raising funds for War Relief Activities and in conducting liberty loan and thrift stamp campaigns.

In the absence of the majority of the junior and senior men, he responsibility for college activities has fallen chiefly upon he women. Their loyalty to college traditions and their responsiveness to the spirit of the times has been thoroughly tested. They gave a pledge of their good faith early in the year, by oting to suspend the elaborate production of the Partheneia and to substitute a simple expression of loyalty to the ideals out f which the festival sprang. Entertainments given by the Associated Women Students throughout the year represented a minimum of expense and a maximum of ingenuity. That these standards were approved by both men and women was cleverly exemplified in the senior Extravaganza.

No just estimate can be made of the effort of the women of he University to do their part in war time without considering those who must be wholly or partly self-supporting. These a women of definite purpose who value a college education. Th are willing to work all of their waking hours to attain it. T war has increased their number and the high price of food h made harder the life of each one of them. They cannot gi time to student war work, but their determination to be train for usefulness at any cost deserves recognition as a patriot service. The following report by the Assistant Dean of Wom gives the outstanding facts in regard to the employment women students.

Respectfully submitted,

LUCY WARD STEBBINS,
Dean of Women.

REPORT OF THE STUDENT EMPLOYMENT BUREAU OF THE OFFICE OF THE DEAN OF WOMEN, June, 1917–June, 1918

Opportunities		Students		Employers	
Character of work	Rate	Applicants	Placed	Applications	Pla fill
Housework	3 hours daily service for room and board	181	181	225	18
Housework	Room and board and cash	95	95	105	9
Miscellaneous work by the hour, care of children, stenography, typing, attendant in cloak room, cafeteria, sewing	20–40 cents per hour	353	231	....	..
Clerk in department store	$1.67 to $2.50 per day	37	25	....	..
Substitute in Public Library during vacation	$52 a month	40	28	339	32
Housework and care of children during vacation	Board and room and $15–40 per month	46	16	....	..
Proctors and assistants in Summer Session	Tuition in Summer Session	44	20	....	..
Total		796	596	669	59

CALIFORNIA MUSEUM OF VERTEBRATE ZOOLOGY*

BERKELEY, July 1, 1918.

o the President of the University,

SIR: I have the honor to present the following report of the ork of the Museum of Vertebrate Zoology for the year 1917–18.

Good progress has marked the course of the year's work of he California Museum of Vertebrate Zoology. The necessary outine, the nature of which has been explained in preceding eports, has been handled with diligent attention to detail. At he same time the degree of this attention to detail has not been so xtreme as to prevent active participation in matters of general mport. In other words, it is believed that a fair balance has een maintained whereby the investment in our plant has been ealized upon to the advantage of all.

The founder of the Museum, Miss Annie M. Alexander, has ontinued her support in full measure, and this in combination ith the good counsel rendered by her in several matters of general policy, has constituted an essential basis for carrying out ur programme of work.

The special needs of the times have somewhat modified the ature of our research. Economic problems are claiming most f our immediate attention, rather than exclusively scientific nes. Thus our field-work the past spring has had for its principal object the acquisition of information relative to those odents of California which affect crops and native forage.

It would seem that as full knowledge as possible of the life-

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* A list of gifts presented to the Museum of Vertebrate Zoology will e found on pp. 202–205.

histories of our rodents is necessary to the determination of t
most successful means of controlling them and to the prop
application of these means to the varying conditions througho
the state. This knowledge should include facts as to the distri
tion of each of the species, the breeding rate of each, the exte
of their burrow systems, their food habits, and indeed eve
other class of obtainable facts relative to their natural histo

Attention has been concentrated so far upon the *comm*
pocket gopher and the *California ground squirrel;* as a parti
result there have appeared two pamphlets written by Mr. Dix
of our staff and published under the auspices of the Agricultur
Experiment Station, their titles being "*Control of the Pock*
Gopher in California," and "*Control of the California Grou*
Squirrel." These papers were given wide circulation throug
out the state, and many have testified as to the practical natu
of the recommendations made in them. Preparation of furth
bulletins is under way, one of which, "*The Natural History*
the Ground Squirrels of California," under the co-authorsh
of Dr. Grinnell and Mr. Dixon, was undertaken at the speci
request of the State Commission of Horticulture and will appe
in its series of publications.

Mr. Swarth has continued his systematic studies of weste
groups of birds. There have been published under his autho
ship this year reports upon the brown towhees (*genus Pipilo*
jays (*genera Perisoreus and Aphelocoma*), and marsh wre
(*genus Telmatodytes*). He has now under way a critical r
vision of the report on the fox sparrows (*genus Passerella*),
occurring throughout North America.

Dr. Bryant has continued his activities along education
lines. Two University extension courses in bird study were o
ganized in San Francisco and in Berkeley. One of these was
largely attended that it had to be conducted in two sections. I
association with Dr. Grinnell, Dr. Bryant gave the usual cour
(Zool. 113) in general vertebrate zoology, during the regul
spring semester of the University, and a course on the birds
California during the Summer Session. Numerous lecture
under the auspices of the State Fish and Game Commission, o

e general topic of wild-life conservation, were given in various ties and towns of the state.

Field work during the fall months involved the conclusion of e explorations in the Inyo and Death Valley regions. Although e possibilities of those parts of the state from the standpoint faunal study remain far from exhausted, it has seemed best to fer further attention to them until the termination of the ar. The past spring a field itinerary was decided upon leading rough the cultivated sections of the San Joaquin Valley, where dent investigation was the main object in view.

There has been a total of 152 accessions of scientific material uring the past year. These involved 4388 separate specimens, talogued and installed. The largest accession from any one urce was Number 1265, the output of the Museum expedition orking in the Inyo and Death Valley regions of extreme east-n California. This consisted of 3281 specimens.

The entire number of catalogued specimens now contained in e Museum is 65,468, distributed among the four departments s follows: mammals, 27,937; birds, 29,093; reptiles and amphi-ians, 6710; sets of birds' eggs, 1728.

Loans involving 1845 specimens were made to 22 different stitutions and individuals. Investigators in ornithology and ammalogy in Washington City alone made use of 1088 of our ammals and birds. In return, the work of our own staff in its ecial studies involved the borrowing of some 250 specimens; that the adoption of the principle of free loaning of scientific aterial has brought reciprocal value to us here.

Our staff has been enlarged by the addition of Miss Lula . Burt as Assistant Curator in Osteology and Mr. Richard M. unt as Acting Assistant Curator of Birds. Mr. Hunt assumes r the time being the duties of Mr. Tracy I. Storer who is absent war service. The title of Mr. Dixon has become that of Eco-mic Mammalogist, which more exactly indicates the nature of s special work.

Respectfully submitted,

J. Grinnell,
Director.

GIFTS TO THE UNIVERSITY

(General List)

Alexander, Miss Annie M., $6090 for the support of the California Museu of Vertebrate Zoology for the six months ending December 31, 191

Bauer, G. W., $100 for the Department of Chemistry Library.

Bell, Mrs. Alice, 20 volumes in the field of mining engineering a geology, in memory of her husband, Bertram C. Bell, '11, who w killed at the Simonds and Latham Cyanide plant at the Argona mine, near Jackson, Amador County, April 15, 1917.

Biltmore Herbarium, The, through Mr. William R. Maxon, associa curator of the Division of Plants of the National Museum, 16 mounted specimens to the University Herbarium.

Boggs, Miss A. Noris, of the Bureau of Commercial Economics of t Department of Public Instruction of Washington, D. C. duplica copies of the publications of the French War Office.

Bradley, F. W., '86, a mine rescue outfit for the instruction of studen in the College of Mining.

Brandenstein, Mrs. Manfred, a bust of Voltaire, to be placed in t Library of French Thought.

Brownsill, Dr. Edith, '99, M.D., '04, $500 as an addition to the Alumn Endowment Fund placed in the stewardship of the Regents for t benefit of the University Y. W. C. A.

Bryce, Miss Mary T., of Fort Hill, Pittsfield, Massachusetts, $100 towa the endowment of the Edith J. Claypole Memorial Research Fund.

Calleja, Casa Editorial, through Mr. J. C. Cebrian, two copies of Calleja *Diccionario manual ilustrado enciclopédico de la lengua castellana.*

Cebrian, J. C., in renewal of his generous giving in the past, to t University Library 348 volumes of Spanish works, literary and scie tific, including a number of rare volumes. One hundred and sevent two additional volumes of Spanish books on literary and scientif subjects to the collection which he has assembled at the Universit Library. With the exception of a few volumes published in t sixteenth, seventeenth and eighteenth centuries, they are mostly wor printed in 1917.

ass of 1885, $1068.17, subject to the following conditions:

"One thousand dollars is to be held as capital, and kept as a unit and invested and re-invested, and the balance of sixty-eight and 17/100 dollars to be held in an interest account. The interest on the principal amount now and at any time hereafter is to be loaned to any undergraduate in the Academic Department of the University who may require assistance and who may satisfy the authorities of his or her necessities, in such an amount as may be determined, and upon such terms as to repayment without interest as may be imposed upon the recipient; it being intended that the total available for annual loans shall be increased by the successive repayments. Preference is to be shown to a descendant of any person who was at any time a member of the Academic Class of '85."

lass of 1917, $2000 as a class endowment. The letter of October 3, 1917, by which Treasurer Ferris S. Moulton of the Class of 1917 transmitted this gift was as follows:

"The Board of Regents,
University of California,
Berkeley, California.

Gentlemen: It gives me great pleasure to hand you herewith a check for $2000, which is to be a nucleus of an endowment fund of the Class of 1917.

This fund is placed with you for investment at whatever rate of interest your board decides upon and will be added to from time to time from various sources. The principal of the fund is to be kept intact until 1935, and is then to be paid back to the permanent class treasurer. The interest on the fund is to be paid semi-annually to the Permanent Organization Fund of the Class, which will be kept by the Alumni Secretary of the University of California.

If at any time necessity demands, a majority of the Executive Board of the Class of 1917, consisting of S. S. Barrows, F. W. Stewart, and F. S. Moulton, may call upon the Regents to return to the Permanent Organization Fund any or all of the principal, which at that time is in their hands, provided the money is to be used for some University purpose which, in the judgment of the Regents, is a worthy one.

The present plans of the class call for a reunion in 1935, at which time the principal sum in the hands of the Regents will be added to by popular subscription and the total amount used to erect some fitting and permanent memorial to the Class of 1917.

Yours respectfully,
The Class of 1917,
Ferris S. Moulton,
Treasurer."

oleman, Miss Persis H., and Miss Janet B., $2500 each toward the William Watt Kerr Memorial Fund, with the understanding that the purposes to which this gift shall be applied are to be submitted to the approval of Mrs. Kerr.

Crocker, Regent William H., funds for the salary, at $600 per annum, o Miss Regina Woodruff, as Research Assistant in Protozoology (on th Crocker Foundation) to aid in researches being carried on by Charle A Kofoid, Professor of Zoology, with regard to intestinal parasites

An offer of $2500 toward the cost of an expedition to observe th total solar eclipse of June 8 in Oregon or Idaho.

Dickie, David Walker, Professor of Marine Engineering and Naval Architecture, to the Library of the Department of Mechanical Engineering volumes 9 to 24 of *The Transactions of the Society of Naval Architect of New York.*

Doheney Mexican Commission, $1200, to pay a cataloguer one year to ai in cataloguing materials on Mexico.

Doheney, Edward L., $1200, to pay an editorial assistant for one year to begin work on the publication of a large series of volumes of documentary materials for Western History.

Dunshee, B. H., '79, Assistant Manager of the Anaconda Copper Mine Company, a handsome and valuable mass of rich copper ore.

Douglas, George Bruce, to the University $1000, the first of five payment in support of the astronomical researches of the University at Santiago, Chile, which have been maintained there since 1900.

Electro Chemical Supply and Engineering Company, 50 pounds of Dur cement and 100 pounds of Duro brick.

Fisher, Miles B., '94, to the University a *viola da gamba* of much histori interest.

France, The Republic of, bookplates, designed by H. Guillaume and engraved by Maquet, to be placed in each of the collections of severa thousand volumes exhibited by France at the Panama-Pacfiic International Exposition and then presented to the University. This "Library of French Thought" represents the greatest achievements of France during the past hundred years in science, literature, history, philosophy, and art. A French commission came from Washington to participate in the dedication of the collection and the room in the Library which houses it.

French Ministry of Commerce and Industry, The, a complete set of weights and measures, together with replicas of the International Prototype Metre, and the French Ell bearing the coat of arms of the house of Bourbon and the signature of the king, with the date, 1751.

Frick, Childs, of Santa Barbara, to the Department of Palaeontology, a most interesting collection representing the results of palaeontologic and geologic investigations carried on by him in the San Timoteo region in 1917.

ıha, K. K., '16, $50 to found the Nalanda Loan Fund. This fund is to be used for loans to Hindustanee students, preference being given to members of the Nalanda Club; the president of that organization is to be consulted before loans are made. No individual is to be loaned more than $25.

anna, Most Reverend Edward, $250 for the purchase of one of the rarest items of early Californiana, *Father Picolo's Informe del Estado de la Nueva Christiendad de California,* printed in Mexico in 1702.

earst, Regent Phoebe A., an additional $2500 toward the equipment of the Hearst Memorial Building, with the request that it be expended within a year from the date of her gift.

One thousand six hundred and eighty dollars for the maintenance of the Museum of Anthropology.

A motion picture reel dealing with the Hopi tribe of Indians, for the Bureau of Visual Instruction.

Five hundred dollars as her semiannual contribution toward the salary of the Supervising Architect.

Twelve hundred dollars as her semiannual gift for the Phoebe A. Hearst Scholarships for women students.

Two portfolios comprising: *A history of Oriental carpets before 1800;* $1200 for the maintenance of the Phoebe A. Hearst Scholarships from January 1 to June 30, 1918; $500 toward the salary of the Supervising Architect for the period January 1 to June 30, 1918; and $508.85, being the final half of her gift for frames and cases at the Museum of Anthropology.

Four paintings by Carl Oscar Borg: two of Hoppi kachina dancers, one of the famous Hopi Snake Dance, one portraying several kachina dancers. The pictures are notable as accurate ethnological records.

ellman, Regent Isaias W., $50,000 to endow four scholarships for the aid and encouragement each year of four needy, deserving, and competent students in the academic departments. The income on each scholarship will be approximately $500 a year—of unusual liberality for an undergraduate scholarship. ''My long connection with your Board,'' said Regent Hellman's letter of October 3, 1917, to the Regents, ''my interest in the growing usefulness of the University, and my desire to be of some help to worthy students in the generations to come, have all combined to prompt this gift.''

endy Iron Works, Joshua, a 20-inch Hendy Double-Cone Classifier, and a 5-foot Callow Cone.

oughton, Edward T., a complete set of Official Records of the Union and Confederate Armies and Navies in the War of the Rebellion, and eight volumes constituting the Report of the Congressional Investigation held during the progress of the Civil War.

Howard, Bruce, '19, and his mother, Mrs. John L. Howard, $127.02 for the purchase of a new operating table, an instrument stand, and special instruments for the Infirmary.

Howison, Mrs. Lois T., to the University the rare collection of books on philosophical subjects created by the late Professor George Holmes Howison. It is her intention that these books, at present consisting of 1235 volumes, shall form the basis of a departmental library for the Department of Philosophy. Mrs. Howison gave also seven engravings, suitably framed, to be installed in the philosophical seminar room.

Hutt, L. C., of the International Film Service, Inc., 300 feet of motion picture films taken on the occasion of Charter Day and the events of the Semicentenary Week.

Knight, Allen, Jr., the professional library of his father, consisting of books and pamphlets relating to accountancy.

Kraft, George H., to the University $50,000, to endow the Herbert Kraft Scholarships in the College of Agriculture for graduates of any high school of Tehama County who either personally, or whose parent or parents, shall have resided in Tehama County for at least five years prior to appointment to such scholarship, no distinction to be made on account of race, creed, or color; appointments to be made after consultation with the faculties of the high schools of Tehama County.

Lawton, Mrs. M. A., $2000 toward the William Watt Kerr Memorial Fund. For the present, the income is to be used for loans to medical students.

Loughridge, Dr. Robert Hills, late Professor of Agricultural Chemistry, Emeritus, $3000 to endow the Loughridge Scholarship, the income to be used for a scholarship or scholarships for students in the Department of Agriculture of the University, the Regents to have the right, in their discretion, to use the principal as well as the income of this fund for this purpose.

H.R.H., the Maharajah of Mysore, and Professor C. A. Kofoid, two tusks of an Indian elephant, secured by Professor Kofoid in 1916 on his expedition to the Indian jungle. The journey was made possible by the gift of William H. Crocker.

Mitchell, Elizabeth Patterson, of San Francisco, $30,000, to endow a scholarship in music. The provisions of the will relating to this bequest are as follows:

> "I hereby direct and empower my executors and trustees to pay out of the body of my estate the sum of Thirty Thousand Dollars ($30,000.00) to the University of California for the following uses and purposes.

I desire the University of California by its governing body to invest this sum of money in interest bearing securities with power to change the investment or investments from time to time as they may deem fit.

The said sum of money so invested shall be known as the George Ladd Scholarship Fund.

The net proceeds from the investment of said sum each two (2) years shall be awarded as a prize to a student of music at the University of California (of either sex) who shall have attained the highest excellence in his or her studies in harmony and composition for the given period of two years.

Provided, however, that the said prize shall be paid to said student for the single purpose of enabling said student to proceed to Paris, France, and to obtain two further years of musical study in Paris with particular reference to advanced harmony, composition and orchestration.

The said governing body shall pay said prize to the said successful student in equal apportionments covering the said period of two years, either in monthly amounts or otherwise as said governing body may determine.

This said prize shall be known as the George Ladd *Prix de Paris.*’’

Another bequest reads as follows:

‘‘I will and bequeath to my friend Chester Fentress One Thousand and Fifty shares of the American Telephone and Telegraph Company’s stock.

Also my Marsh Land, 1846 acres, in Sonoma County with the hope that he will keep it as an nest egg as I have done—and at his death he will leave it to the University of California in memory of George S. Ladd. I am sure he will do so.’’

onsen, Frederick, four photographs of Indian life.

orrison, Alexander F., ’78, $5000 toward the erection and equipment of the new University Hospital in San Francisco.

undwyler, J. Louis, and Fred, of San Francisco, to the University a very extensive collection of chamber music, valued at approximately $1200, to be known as ‘‘The Mundwyler Brothers Collection of Chamber Music, Donated to the University of California by J. Louis and Fred Mundwyler.’’ This collection of great quartettes, quintettes, trios, etc., many of which are now out of print, includes a rich store of compositions by Beethoven, Josef Haydn, Schubert, Schumann, Mendelssohn-Bartholdi, Pleyel, Eighberg, Aloys Schmidt, Ignats Lachner, Bonewitz, C. Schubert, Rubenstein, Onslow, Louis Spohr, Volkmann, Lindpaintner, Raff, Rode, Vieuxtemps, Litolff, Doring, Schneitzhoeffer, Kassmeyer, Mayseder, Gade, Gernsheim, Krommer, F. Ries, J. N. Hummel, F. Kuhlau, J. Van Boom, J. C. Lobe, Carl Reinecke, C. M. von Weber, W. F. Riem, J. Brahms, J. Bertini, Jr., W. A. Schaffner, A. Alexander, Fr. Gustav, Lange, F. Danzi, S. Zenzon, A. B. Furstenau, and Antone Reicha.

Noble Electric Steel Company, 50 pounds ferromanganese.

Pacific Coast Gas Association, The, $4415, in completion of its subscription toward instituting a chair of Gas Engineering in the University This makes a total gift from the Association for this purpose o $12,115.

Pacific Foundry Company, Laboratory Herreshoff Roasting Furnace having a value of $750.

Rickard, T. A., a number of books for the Library of the Departmen of Mining.

Standard Oil Company, to the College of Mining the exhibit, valued a $2000, which it displayed at the Panama-Pacific International Exposition The exhibit will be used for instruction in petroleum engineering.

Swedish-American Patriotic League of California, $125 toward the maintenance of the Swedish-American Patriotic League of Californi Scholarship.

University of California Magazine, through its trustee, Mr. Bryan Bell, '03 has given $207.60, obtained from the sale of the book of universit stories, *Under the Berkeley Oaks.* It is suggested by the donors tha the money be devoted to an endowment fund, for the purchase o books by California authors, each book to have inscribed on the book plate that the fund was donated by the students as a mark of hono to Mrs. Phoebe A. Hearst.

Van Fleet Freear Company, an exhibit of cork insulation.

Walker, T. B., $100 for lantern slides of selected paintings in his privat gallery.

A group of members of the dental profession have joined in givin $307 for a grinding machine, to be used for dental research work. Th donors are:

Ten dollars each: Drs. H. G. Chappel, J. E. Gurley, J. S. Marshall C. E. Post, F. E. Hart, G. L. Bean, C. D. Gilman, T. S. Smith, Robt Burns, Jr., Frank Pague, F. L. Platt, H. A. Frederick, Franklin Locke J. H. Mackay, G. S. Millberry, T. R. Edwards.

Five dollars each: Drs. E. J. Howard, H. D. Smith, C. S. Hardy A. H. Wallace, H. G. Allen, H. T. Hendrick, G. W. Hein, R. J. Blauer A. M. Barker, G. N. Van Orden, S. J. Ashley, W. K. Scott, R. N. Griffin F. Moore, T. E. Moore, Robt. Dunn, T. Fletcher, F. W. Shores, R. E. Keys W. H. Renwick, S. W. Hall, R. I. Woolsey, H. A. Tuckey, J. J. Pfister Harley Stephenson, F. H. Kestler, H. E. Gedge.

Two dollars and a half each: Drs. H. E. Dempsey, J. P. Parker, D. H Leppo, G. H. Worrall, R. H. Allen, W. R. Hughes.

Two dollars: Dr. John Blodgett.

GIFTS TO THE HERBARIUM, BOTANICAL MUSEUM, AND BOTANICAL GARDEN

To the Herbarium

lexander, Misses Annie and Mary C., Oakland, 10 phaenogams and 15 ferns from Crater Lake, Oregon.

rmer, Mrs. Sidney, Berkeley, 2 specimens *Chrysothamnus* from Mono Lake.

ethel, Ellsworth, Bureau of Plant Industry, U.S. Department of Agriculture, 1 sheet of *Pinus quadrifolia* from Riverside County.

ettys, Mrs. J. A., Sanger, 1 sheet of *Nama Parryi* from Fresno County.

ollins, Frank S., Eastham, Massachusetts, 93 sheets of marine algae from the Philippine Islands.

oolidge, Dane, Berkeley, 1 specimen of *Chrysothamnus* and 1 of *Artemisia*, both from Goldfield, Nevada.

avidson, Dr. A., Los Angeles, 4 sheets of phaenogams and 1 new hybrid *Ceanothus*.

reeman, Miss Ella M., Cisco, 1 sheet of *Echinocystis lobata* from Placer County.

ardner, Professor N. L., University of California, 8 sheets of *Boschniakia* from Sitka, Alaska.

rant, Mrs. Adele Lewis, '02, Columbia, 7 sheets of ferns.

epson, Professor W. L., University of California, 1 specimen *Ferula narthex*.

ohnston, I. M., Upland, 29 sheets of plants from southern California.

ones, Miss Frances G., Grass Valley, 1 sheet of *Nandina domestica* in fruit.

ennedy, Professor P. B., University of California, 3 sheets of Compositae.

ibby, Miss Gretchen L., Santa Barbara, 2 sheets of phaenogams.

inthorn, Theodore, Los Angeles, 130 sheets of phaenogams from Alaska and Lower California.

oxley, George L., Los Angeles, 13 sheets of phaenogams from southern California.

arish, S. B., San Bernardino, 41 sheets of phaenogams.

amaley, Professor Francis, University of Colorado, Boulder, Colorado, 231 sheets of phaenogams collected in California.

eed, Miss Ramona R., '14, San Luis Obispo, 15 sheets phaenogamous plants.

ose, Lewis S., '17, San Francisco, 713 sheets of marine algae collected in Japan; also 11 sheets of ferns collected in Japan.

Ryan, Miss Margaret, Deeth, Nevada, 2 sheets of *Chrysothamnus* from tl Humboldt River Valley.

Setchell, Professor W. A., University of California, 6 sheets of *Arct staphylos* from Mariposa County.

Stilwell, O. J., Ogden, Utah, 4 sheets of *Chrysothamnus.*

Sutcliffe, James, Sutcliffe, Nevada, 5 sheets of *Chrysothamnus* fro Pyramid Lake.

Thomas, W. W., Salinas, 8 sheets of phaenogams from Kings Count

Tracy, J. P., '03, Eureka, a collection of 133 sheets of plants from nort western California, including 103 to be mounted for herbarium use ar 30 to be distributed as duplicates to other botanical institutions; a fully determined and with complete data.

University of California Museum of Vertebrate Zoology, Berkeley, sheets of specimens from Inyo County collected by Mr. Tracy Stor and 31 sheets from White Mountains, Mono County, collected by Pr fessor Grinnell and Mr. A. C. Shelton.

Valentien, A. R., San Diego, 1 sheet of *Chrysothamnus ceruminosus* fro the Mojave Desert and 1 sheet *Lotus Haydoni.*

Worden, Clinton E., San Francisco, 4 sheets of phaenogams.

(Total number of specimens received by gift from July 1, 1917, t June 30, 1918, for the Herbarium, 1595.)

To the Botanical Museum

Babcock, Professor E. B., University of California, 2 acorns of *Querc aegilops* from George C. Roeding of the Fancher Creek Nurseries.

Bell, George H., Lancaster, 2 specimens of *Pholisma* from Antelope Valle

Freeman, Miss Ella M., Cisco, specimens of capsules of *Echinocystis lobat* from Placer County.

Gardner, Professor N. L., University of California, tubers of *Boschniak* from Sitka, Alaska.

Hall, Professor H. M., University of California, 2 specimens of cushio plants from the Rocky Mountains, 4 specimens of Coniferae fro Colorado, 1 specimen of *Glycyrrhiza* from Inyo County, and 3 specimen of cacti from Inyo County.

Kennedy, Professor P. B., University of California, 16 specimens o sorghums from the Experiment Station of the University of Californi

Libby, Miss Gretchen L., Santa Barbara, 1 pod of *Araujia.*

Parks, Harold E., San Jose, 636 specimens of fungi.

Rice, W. S., Oakland, 9 seeds from *Carica papaya.*

Rose, Lewis S., '17, San Francisco, 38 specimens of marine algae co lected in Japan; determined by Professor K. Yendo.

Stevens, Professor R. T., Santa Barbara, 3 specimens of wood o *Caesalpinia echinata.*

ully, Mrs. J. O., Berkeley, 1 puff ball collected at Donner, California.

utcliffe, James, Sutcliffe, Nevada, 5 specimens of *Chrysothamnus* from Pyramid Lake.

(Total number of specimens received by gift from July 1, 1917, to une 30, 1918, for the Botanical Museum, 725.)

To the Botanical Garden

randegee, Mr. and Mrs. T. S., University of California, 13 packets of seeds.

handler, Harley P., '02, Redlands, 33 packets of selected seeds of California plants.

ish, Mrs. L. I., Berkeley, bulbs of *Allium neapolitanum.*

alker, A. L., Oakland, roots of *Atropa belladonna.*

(Total number of specimens received by gift from July 1, 1917, to une 30, 1918, for the Botanical Garden, 48. Grand total of donations o the department between these dates, 2368.)

GIFTS TO THE DEPARTMENT OF ZOOLOGY

July 1, 1917, to June 30, 1918

laska Packers' Association, San Francisco, 6 small black fish (*Dallia pectoralis*), from near Muskagak Bay, Alaska.

allou, Mrs. F. H., turtle skeleton found on top of Salt River Valley Mountains, near Phoenix, Arizona.

aumhoff, A., Camino, 1 mole.

obb, J. F., Windsor, cysticercus stage of *taenia serialis* from a jack rabbit.

ardner, N. L., Department of Botany, University of California, 6 small fish infested with protozoan parasites.

elley, H. L., U.S. Bureau of Fisheries, Washington, D.C., bay mussels from Richardson Bay; large mussels from Point Lobos, near Pacific Grove, California.

a Honda Stock Farm, specimen of *ambystoma ensatum* (*Eschscholtz*), (Marbled Salamander).

cCulloch, Miss, New Orleans, 1 large *amphiuma.*

cDonald, J. D., small bottle of *marine turbellaria* collected at Venice.

osley, F. Y., Riverside, 2 *batrachoseps major* (Garden Salamander), one of which was given to the Museum of Vertebrate Zoology.

ygienic Laboratory, State Board of Health, mussels from Light House Point and Wilder's Beach; mussels from Santa Cruz.

ankin, E. R., mussels from Santa Cruz.

alters, Edwin, Sawtelle, specimens of butterflies.

GIFTS TO THE CALIFORNIA MUSEUM OF VERTEBRATE ZOOLOG

July 1, 1917, to June 30, 1918

NOTE.—This list does not include specimens secured by collecto regularly employed from the fund provided by Miss Annie M. Alexand for the maintenance of the Museum, nor does it include a number accessions received by purchase out of the same fund.

The term ''mammal'' as here used ordinarily means a dry study-sk plus the cleaned skull belonging to the same individual, not infrequent a complete skeleton, and sometimes the entire animal preserved in alcoh A ''bird'' is usually a dry study-skin, sometimes a partial or comple skeleton. A ''set of eggs'' is the total number of eggs found in a sing bird's nest, often accompanied by the nest itself. A ''reptile'' ''amphibian'' is the entire animal preserved in alcohol.

Localities are in California unless otherwise specified.

Alexander, Miss Annie M., 44 mammals from Crater Lake and Pro pect, Oregon; 1 river otter (*Lutra c. brevipilosus*), from Joyce Islan Solano County; 1 mink (*Mustela v. aestuarina*), from Grizzly Islan Solano County.

Allen, Mrs. James T., 1 California screech owl (*Otus a. bendirei*), golden-crowned sparrow (*Zonotrichia coronata*), 1 black-headed gro beak (*Zamelodia m. capitalis*), from Berkeley.

Arnold, Dr. Ralph, 1 willow ptarmigan (*Lagopus lagopus*), from Albert Canada.

Bingmann, A., 1 foreign bird (*Emberiza stracheyi*); 1 young alligat (*Alligator mississippiensis*), from Florida.

Blacker, George H., 1 alligator lizard (*Gerrhonotus coeruleus*), fro Berkeley.

Boeck, Dr. W. C., 3 pocket mice (*Perognathus californicus*), from Berkele

Boyle, Miss Una, 1 western red bat (*Nycteris b. teliotis*), from San Rafa

Bradley, Professor J. C., shed skin of California boa (*Lichanura rose fusca*), from Palm Springs, Riverside County.

Bryant, Dr. H. C., 4 foreign birds (*Poephila* and *Melopyrrha*); 1 starli (*Sturnus vulgaris*); 2 birds' heads (*Grus mexicana* and *Olor colu bianus*), from Pennington, Sutter County.

Bundock, J. L., 1 California mule deer (*Odocoileus h. cailfornicus*), fro Tehachapi Mountains, Kern County.

Carriger, H. W., 13 birds from Lake Merced, San Francisco County.

Clarke, Frank C., 1 weasel (*Mustela x. munda*), 6 moles (*Scapanus lat manus*), 2 Cooper hawks (*Accipiter cooperi*), 2 coyote skulls an 1 coyote (*Canis ochropus*), 2 sharp-shinned hawks (*Accipiter velox* 3 deer skins and skulls and parts of 2 deer skins (*Odocoileus columbianus*), 2 wild cats (*Lynx*), 1 hoary bat (*Nycteris cinerea*

1 crow (*Corvus v. hesperus*), 1 skin of black bear (*Ursus a altifrontalis*), 1 California bat (*Myotis californicus*), 2 raccoon skulls and 1 raccoon (*Procyon p. psora*), all from Laytonville, Mendocino County.

ort, Professor W. W., 1 Pacific pallid bat (*Antrozous p. pacificus*), from Berkeley.

ickey, Donald R., 1 kangaroo mouse (*Microdipodops californicus*), from near Vinton, Plumas County.

irks, W. N., 1 Sora rail (*Porzana carolina*), from near Hayward, Alameda County.

ixon, J. B., nest and 3 young of pocket gopher (*Thomomys b. bottae*), from Escondido, San Diego County.

onahue, Miss Christine P., 1 meadow mouse (*Microtus californicus*), from Menlo Park, Santa Clara County.

ouglas, S. H., skin and skull of deer (*Odocoileus h. californicus*), from Saugus, Los Angeles County.

uff, Lee C., 1 foreign bird (*Trichoglossus novae-hollandiae*).

uff, Mrs., 1 tortoise, from Port Limon, Costa Rica.

erguson, Miss Elizabeth Van E., 1 Pacific horned owl (*Bubo v. pacificus*), from Berkeley.

erriss, J. H., 3 jackrabbits (*Lepus alleni*), 1 ground squirrel (*Citellus grammurus*), 1 western red-tailed hawk (*Buteo b. calurus*), 1 roadrunner (*Geococcyx californianus*), 1 cottontail (*Sylvilagus nuttalli*), from Arizona.

rant, Mrs. A. L., 1 Bryant marsh sparrow (*Passerculus s. bryanti*), from near Manzanita, Marin County.

ray, John T., 1 kangaroo rat (*Dipodomys californicus*), from near Ruth, Trinity County.

riffin, Miss Eva, 1 nest of western winter wren (*Nannus h. pacificus*), from Big Basin, Santa Cruz County.

rinnell, J., and Hunt, R. M., 20 birds, from Claremont Canyon, Berkeley.

rinnell, Willard, 1 junco (*Junco o. thurberi*), from Berkeley.

anna, W. C., 1 worm snake (*Leptotyphlops humilis*), 1 white-throated swift (*Aeronautes melanoleucus*) and egg of same, from near Colton, San Bernardino County.

arris, J. W., 1 loon (*Gavia immer*), from Yreka, Siskiyou County.

eger, R. H., 4 foreign birds (*Cacatua leadbeateri, Pycnonotus atricapillus, Eclectus roratus*).

enshaw, F. W., 1 snow goose (*Chen hyperboreus*), 2 white-fronted geese (*Anser a. gambeli*), from near West Butte, Sutter County; 5 wood ducks (*Aix sponsa*), from Butte Creek, Butte County; 1 Virginia rail (*Rallus virginianus*), from Suisun marshes, Solano County.

ill, Miss Adrianne M., 1 foreign bird (*Ocyphaps lophotes*).

obart, W., 1 foetus of deer (*Odocoileus c. scaphiotus*), from San Mateo County.

Howell, A. B., 13 bird skins, from various localities; 6 reptiles, 2 ba rachians, from Los Angeles, and Tucson, Arizona.

Hunter, J. S., 1 hoary bat (*Nycteris cinerea*), from San Mateo.

Isenberg, A., 1 starling (*Poliopsar blythii*).

Jacobsen, W. C., 1 ground squirrel (*Citellus b. fisheri*), 1 red-winge blackbird (*Agelaius phoeniceus*), from Stanislaus County; 2 roun tailed squirrels (*Citellus t. tereticaudus*), from near Holtville, Imperi County.

Kaeding, George L., 1 sage hen (*Centrocercus urophasianus*), 3 grour owls (*Speotyto c. hypogaea*), from Rennox and Battle Mountai Nevada.

Kellogg, Remington, 1 gopher (*Thomomys b. bottae*), from Berkeley; 4 amphibians (*Rana boylii, Ambystoma ensatum, Notophthalmus torosus* from near Mill Valley, Marin County; skull of great horned ov (*Bubo v. pallescens*), body skeleton of white-throated swift (*Aeronaut melanoleucus*), from Montana.

Koch, F. W., 2 gray-headed conies (*Ochotona schisticeps*), 1 Allen chi munk (*Eutamias senex*), from Donner Pass, Placer County.

Koeber, James, 1 American golden-eye (*Clangula c. americana*), fro Tubb's Island, Sonoma County.

Law, J. Eugene, 10 California mud turtles (*Clemmys marmorata*), fro vicinity of Los Alamitos, Orange County.

Lindsey, Mrs. M., 1 Pacific horned owl (*Bubo v. pacificus*), from ne Coulterville, Mariposa County.

Little, Luther, 2d., 4 mammals (*Neotoma intermedia, Perodipus agili Thomomys b. pallescens*), from Los Angeles County.

Lueddemann, Miss Frieda, 1 cedar wax-wing (*Bombycilla cedrorum*), fro Los Gatos.

Mailliard, Joseph, 16 mammals (*Eutamias* and *Citellus*), from Sierra an Plumas counties.

Merle, A. J., 1 foreign fowl (*Gennaeus leucomelanus*).

Moseley, F. Y., 1 salamander (*Batrachoseps*), from Riverside.

Nesbitt, F. B., southern black-tailed deer (*Odocoileus h. scaphiotus*), fro near Salinas, Monterey County.

Newberry, Walter C., 2 mammal skulls (*Canis* and *Lynx*), from Nevad

Noack, H. R., 2 foreign pigeons (*Lophophaps leucogaster* and *Leucosarc picata*).

Ohl, H. C., skeleton of kangaroo rat (*Dipodomys m. nitratoides*), fro near Mendota, Fresno County.

Riley, J. H., 23 mammals, 20 birds, from Falls Church, Virginia.

Robison Bros., 4 foreign birds (*Excalfactoria lineata, Chrysotis auripa liatus, Poephila mirabilis*).

Rupley, Joseph, 2 moles (*Scapanus l. minusculus*), from near Placervill Placer County.

usk, Mrs. G. Y., 1 golden-crowned sparrow (*Zonotrichia coronata*), from Berkeley.

ust, Henry J., 1 rocky mountain pine grosbeak (*Pinicola e. montana*), from Coeur d'Alene, Idaho.

aunders, Aretas A., 1 English sparrow (*Passer domesticus*), from Norwalk, Connecticut.

hussler, George W., 1 red-tailed hawk (*Buteo b. calurus*), 1 set of eggs of pigeon guillemot (*Cepphus columba*), from near San Francisco.

mith, Austin Paul, 4 English sparrows (*Passer domesticus*), from Texas and Nevada.

tewart, Professor G. R., 2 ground squirrels (*Citellus b. beecheyi*), from Berkeley.

torer, Tracy I., 2 horned toads (*Phrynosoma cornutum*), from San Antonio, Texas.

umner, Dr. F. B., 5 alcoholic mammals, from San Diego County; 1 meadow mouse (*Microtus*), and 1 shrew-mole (*Neurotrichus*), from Duncan Mills, Sonoma County; 22 meadow mice (*Microtus*) and 4 harvest mice (*Reithrodontomys*), from Fort Bragg, Mendocino County; 4 meadow mice (*Microtus*), 49 mice (*Peromyscus* and *Reithrodontomys*), from foot of Mount St. Helena, Napa County; 14 mice (*Peromyscus*), from Humboldt, Mendocino and Sonoma counties.

aylor, J. B., 2 western bushy-tailed woodrats (*Neotoma cinerea occidentalis*), from near Lassen City, Lassen County.

nited States Public Health Service, through Dr. W. C. Billings, 187 skulls of ground squirrels (*Citellus*), from vicinity of Martinez, Contra Costa County.

ear, Miss Winifred N., 1 rubber snake (*Charina bottae*), from near Huntington Lake, Fresno County.

ells, Gurni, 1 saw-whet owl (*Cryptoglaux acadica*), from Donner, Placer County.

icht, Chris, 1 skull and horns of mountain sheep (*Ovis nelsoni*), from near Ballarat, Inyo County.

iley, Leo, 2 deer skulls, 3 beaver skulls, from near Palo Verde, Imperial County; 1 amphibian, from Muir Woods, Marin County; 1 ferruginous rought-legged hawk (*Archibuteo ferrugineus*), from Shandon, San Luis Obispo County.

ythe, Miss Margaret W., 1 English sparrow (*Passer domesticus*), from Oakland, Alameda County.

eile, Miss Elsie M., 1 mole (*Scapanus l. latimanus*), from Berkeley; 2 salamanders (*Ambystoma ensatum*), from near Lagunitas, Marin County.

LECTURES AND ADDRESSES

SUMMER SESSION, 1917

ANTHROPOLOGY LECTURES

(Delivered on Sunday afternoons at the Museum of Anthropology,
Affiliated Colleges, San Francisco.)

E. W. Gifford, Associate Curator of the Anthropological Museum:
July 29—Osiris, the Resurrected.
August 5—The Book of the Dead.
August 12—The Gods of Egypt.
August 19—The Pyramids.

ENGLISH LECTURES

Herbert E. Cory, Assistant Professor of English:
July 11—I. Criticism, Education, and Americanism.
July 18—II. The Essential Meaning of ''Liberal Education.''
July 18—III. Democratic Loyalty and the American University.
August 1—IV. Some Educational Implication of Syndicalism.

FRENCH LECTURES

Gilbert Chinard, Professor of French:
July 3—Les journaux de l'arriere et du front.
July 5—La mobilisation.
July 10—La campagne de France, I.
July 12—La campagne de France, II.
July 17—Dans la tranchee.
July 19—La bataille de Verdun.
July 24—Carnets d'aviateurs.
July 26—Les prisonniers.
July 31—Le peuple de France.
August 2—Les poetes de la guerre.

Home Economics Lectures

enry Hunt Clark, Department of Decorative Design, School of the Museum of Fine Arts, Boston, Summer Session Lecturer at Harvard University, 1914–16:
June 22—Design in Nature.
July 5—The Design of the Artisan.
July 12—The Design of the Artist.
July 19—Design in Oriental Art.
July 26—Design in the House.
August 2—Design on the Stage.

iss Marian Hague:
June 26—Ancient Embroideries.
July 3—Embroidery of the 13th and 14th Centuries.
July 10—Renaissance Embroideries.
July 17—European Embroidery of the 17th and 18th Centuries.
July 24—Development of Italian Needlepoints, from the 14th to the 17th Century.
July 31—Later European Laces.

Miscellaneous Lectures

rs. Katharine Philips Edson, Executive Secretary of the Industrial Welfare Commission of the State of California:
July 11—The Minimum Wage for Mercantile Workers.

lbert J. Elkus, M. L.:
July 25—Gregorian Modes and Modern Music.

milio Goggio, Instructor in Italian:
July 25—Literary Relations between Italy and America.

uillermo Franklin Hall, Adjunct Professor of Spanish, University of Texas:
August 1—Feeding the Belgians.

lexander Kaun, Instructor in Slavic Languages:
July 18—The Alignment of Forces in the Russian Revolution.

rederick Hanley Seares, Superintendent of Computing Division, Mount Wilson Solar Observatory, Pasadena:
July 5—The Mount Wilson Solar Observatory, Its Organization and Its Work.

arl E. Seashore, Professor of Psychology and Dean of the Graduate College, University of Iowa:
July 23—The Analysis of Musical Talent.

ames P. C. Southall, Associate Professor of Physics, in charge of instruction in Applied Optics, Columbia University.
July 3—Optical Science and Optical Engineering.

rthur I. Street, Lecturer on the Educational Uses of Current Events:
July 31—The Jokemaker as a Historian.

Carl Vrooman, Assistant Secretary of Agriculture, Washington, D.C.:
  July 18—The Federal Government's Programme on Food Conservati
Benjamin Ide Wheeler, President of the University of California:
  July 12—The Place of the University in the War.

MODERN LANGUAGES LECTURES

Guillermo Franklin Hall, Adjunct Professor of Romance Languages, Ui versity of Texas:
  July 24, 26, 31, and August 2—The Direct Method in the Teachi of Modern Languages.

PREPAREDNESS AND MATHEMATICS LECTURES

Earl Raymond Hedrick, Professor of Mathematics, University of Missour
  June 26—Rangers and Range Finders.
  June 28—The Elements of Surveying.
  July 3—Plane Table Surveys.
  July 5—Maps and Field Sketches.
  July 10—Contour Maps.
  July 12—Cuts and Fills.
  July 17—Framed Structures.
  July 19—Bridges and the Strength of Materials.
  July 24—Stability of Aeroplanes.
  July 26—Stability of Boats and Submarines.
  July 31—Graphic Representation and Statistical Problems of Wa
  August 2—Adding and Computing Machines.

PROBLEMS OF THE WAR LECTURES

Ludwik Ehrlich, B.Litt. Oxon., D. Jur., Lwów, Lecturer in Political Scienc
  July 25—Austria-Hungary and Germany.
  August 1—President Wilson's New Monroe Doctrine.

THE WORLD WAR AND AMERICAN IDEALS LECTURES

Dr. Charles E. Chapman, Assistant Professor of California History:
  July 16—Latin America and the War.
Dr. Edward Elliott, Professor of International Law and Politics:
  July 2—The New Position of the United States as a World Powe
Dr. F. H. Hodder.
  July 30—The World War in Caricature.
Dr. E. I. McCormac, Associate Professor of American History:
  July 9—American Democracy.
Dr. Richard F. Scholz, Assistant Professor of Ancient History:
  July 23—A League of Honor; Reconstruction and Constructiv Peace.

ACADEMIC YEAR, 1917–18

ANTHROPOLOGY LECTURES

(Delivered on Sunday afternoons at the Museum of Anthropology, Affiliated Colleges, San Francisco.)

W. Gifford, Associate Curator of the Anthropological Museum:
  August 26—The Environment of the Egyptians.
  September 2—The Egyptians of 4000 B.C.
  September 9—Egypt: First and Second Dynasties.
  September 16—Egypt, the Chronometer of Antiquity.
  September 23—An Egyptian Funeral.
  September 30—The Egyptian Pantheon.
  October 7—Osiris, the Savior of the Egyptians.
  October 14—A Guide-book for the Dead.
  October 21—The Pyramid Texts.
  October 28—The Pyramids.
  November 4—Manners and Customs in Pyramid Days.
  November 11—The Middle Kingdom.
  November 18—Egypt as a World Power.
  November 25—Life in Egypt in the Days of Rameses.
  December 2—The First Attempt at a Universal Religion.
  December 9—Meroe, or Egypt Transplanted.
  January 20—The Land of Egypt.
  January 27—A Brief Review of Ancient Egyptian History.
  February 3—Egyptian Calendars and Chronology.
  February 10—Egyptian Hieroglyphic Writing.
  February 17—The Government of Ancient Egypt.
  February 24—The Gods of Ancient Egypt (illustrated).
  March 3—Osiris, the Resurrected (illustrated).
  March 17—Egyptian Burial Customs.
  March 24—Worship of Isiris and Isis in Foreign Lands (illustrated).
  March 31—The Immediate Precursors of the Pyramid Builders.
  April 7—The Pyramids.
  April 14—Life in Pyramid Times (illustrated).
  April 21—The Earliest African Explorers (illustrated).
  April 28—The Earliest African Explorers.
  May 5—Ceremonies of Opening the Mouth.
  May 12—The Book of the Dead.
  May 19—What is in the Other World.
  May 26—Egyptian Magic.
r. Theodore Gray, Teaching Fellow in the Department of Anthropology:
  January 7—Prehistoric Human Species.
  January 13—Aspects of Human Heredity.

Robert H. Lowie, Associate Professor of Anthropology:
October 26—Anthropology and War.
December 16—Life Among the Plains Indians.

Paul Radin, Ph.D., Professor of Anthropology at Mills College:
February 14—The Method of History.
February 19—The Method of Ethnology.
February 21—The Relation of Ethnology to History.
February 26—The Group and the Individual.
February 28—The Meaning and Scope of a History of Civilizat n.

Art Appreciation Lectures

F. Melbourne Greene, Ph.D., Lecturer in the University Extension Di- sion, Lecturer on the Appreciation of Art in Simmons College, Bost :
October 1—Nature and Art (illustrated).
October 3—Modes of Interpretation (illustrated).
October 5—Balance, Rhythm and Harmony (illustrated).

New-World Cartography Lectures

(Illustrated)

Dr. E. L. Stevenson of New York, Director of the Hispanic Society f America:
November 21—Mediaeval Geography: the Heritage from Antiqu y and the Contribution to Earth Knowledge in the Pre-Renaissa e Period.
November 22—The Expansion of Geographical Knowledge in e Early Renaissance Period: Overland Exploration and Discov y in Regions beyond Europe, and the Beginnings of Trans-ocea c Expansion.
November 23—The Earliest Explorations and Discoveries in the N w World: Conceptions of the Geography of the Newly Fou l Regions, and the Record as Left by the Contemporary M Makers.
November 26—The Progress of Discovery as Recorded in the Spani - Italian Maps: the First Half Century of New World Geograp .
November 27—The Mapping of French and English Explorati s in the New World.

Drawing and Art Lectures

(Illustrated)

Swarna Kumer Mitra:
November 20—Indian Sculpture.
November 27—Indian Painting.

Economics Lectures

B. Cross, Assistant Professor of Economics on the Flood Foundation:
- October 16—Money and Prices.
- October 23—Credit and Banking.
- November 6—International Trade.

Daggett, Professor of Railway Economics on the Flood Foundation:
- November 13—Tariff.
- November 27—Control of Industry during the War.

R. Macaulay, Instructor in Economics:
- October 9—Value.
- October 30—Business Cycles.

ssica B. Peixotto, Associate Professor of Social Economics:
- September 4—Wants.
- September 11—Human Beings.
- October 2—Wants.

arl C. Plehn, Professor of Finance on the Flood Foundation:
- September 18—Capital Goods.
- September 25—Market Organization.

Great Books Lectures

harles Mills Gayley, Professor of the English Language and Literature:
- September 14—Books about the Great War.
- September 21—"The Evidence in the Case," by James M. Beck.
- September 28—"The Evidence in the Case," by James M. Beck.
- October 5—Church: "The American Verdict on the War."
- October 12—Church: "The American Verdict on the War."
- October 19—"The Pentacost of Calamity," by Owen Wister.
- October 26—"The Pentacost of Calamity," by Owen Wister.
- November 2—"The Pentacost of Calamity," by Owen Wister.
- November 9—The U. S. Official Publication: "How the War Came to America."
- November 16—The U. S. Official Publication: "How the War Come to America."
- November 23—The U. S. Official Publication: "How the War Came to America."
- December 7—"The Pan-German Plot Unmasked," by André Chéradame.
- January 25—"My Four Years in Germany," by former Ambassador James W. Gerard.
- February 1—"My Four Years in Germany," by former Ambassador James W. Gerard.

February 8—"My Four Years in Germany," by former Amb sador James W. Gerard.

February 15—Discussion of "Shakespeare and the Founders f Liberty in America."

March 1—"The Heritage in Common: England, France, a America."

March 8—"Conquest and Kultur," an Official Publication of United States Government.

March 15—"Conquest and Kultur," an Official Publication of United States Government.

March 29—"German War Practices," an official publication of United States Government.

April 12—Curtin's "The Land of Deepening Shadow."

April 19—Curtin's "The Land of Deepening Shadow."

April 26—Curtin's "The Land of Deepening Shadow."
Donald Hankey's "A Student in Arms."

GREEK LECTURES

William Kelly Prentice, Professor of Greek in Princeton Universi Sather Professor of Classical Literature.

January 23—The "Seven Against Thebes" of Aeschylus.

January 25—Analysis, Setting and Stage-management of t "Seven Against Thebes."

January 28—The "Prometheus Bound."

February 5—On Writing Ancient History.

February 12—The World War of 431 B.C.

February 19—Alexander the Great and the Divine Right of Kin

March 5—Sappho.

March 12—The Greek Anthology.

HITCHCOCK LECTURES

Irving Fisher, Professor of Political Economy in Yale University:

General Subject: Price Movements.

October 1—Price Movements before the War.

October 3—Price Movements during the War.

October 5—The Causes of Price Movements.

October 8—The Evils of Price Movements.

October 10—Proposed Remedies.

October 12—The Remedy of "Standardizing the Dollar."

Home Service Institute Lectures

rshall Hale, Manager of the Pacific Division of the American Red Cross:

November 12—The American Red Cross.

sica B. Peixotto, Associate Professor of Social Economics:

November 13—The Field of Home Service.

November 19—Budget Keeping.

Mining Lectures

F. Worley, Specialist in Mine Sanitation.

October 22—Mine Sanitation.

H. Coghill, Metallurgist, Seattle Station, U. S. Bureau of Mines:

March 25, 26, 27, 28, 29—The Molecular Physics of Flotation.

Miscellaneous Lectures

. Alejandro Alvarez, Secretary General of the American Institute of International Law; Member of the Permanent Court of Arbitration at the Hague:

February 25—The Role and Influence of America in the Reconstruction of International Law.

February 27—Necessity of Unifying the Anglo-American Schools of International Law and of Creating a Pan-American School.

March 1—The New Monroe Doctrine and American Public Law.

asaharu Anesaki, Professor of the History of Religions in the Imperial University of Tokyo, Japan:

March 27—Contemporary Religious Movements of Japan.

rah Louise Arnold, Dean of Simmons College, representing the Collegiate Section of the United States Food Administration:

April 15—The Value and Application of College Food Administration Courses.

ofessor David Henry Bauslin, Dean of Wittenberg College, Springfield, Ohio:

November 5—The Apostle of Liberty.

rs. Jeanette W. Emrich:

September 18—Turkey and the War.

October 9—Prussianizing Turkey. (Under the auspices of Berkeley Branch of Armenian and Syrian Relief.)

ofessor Charles Cestre, of the University of Bordeaux.

February 25—The Influence of the French Revolution on Wordsworth and Coleridge.

rgeant Ruth Farnam, of the Serbian Army:

April 24—Liberty Day Meeting Address.

Professor D. M. Folsom, Associate Professor of Mining, Stanford Uni sity; Member Committee on Petroleum of California State Counci Defense:

October 23—Petroleum Utilization.

Charles A. Gilchrist, member of the American Alpine Club:

February 13—Climbs on Famous Mountains (illustrated).

Charles Gilbert Hoag, M.A., General Secretary-Treasurer of the Ameri Proportional Representation League:

March 14—Proportional Representation and its Application to C Government.

M. Victor Horta, Director of the Royal School of Fine Arts of Belgi

April 10—L'Architecture civile et religieuse en Belgique et dan a France du Nord.

Frederick C. Howe, Commissioner of Immigration, New York City:

April 8—The Reconstruction of America after the War.

Thomas Forsyth Hunt, Dean of the College of Agriculture:

March 11—Canada at War.

Alexander Kaun, Instructor in Slavic Languages:

September 17—Parties and Personalities in Russia of Today.

George V. Lomonossoff, Professor of Economics and Transportaion in K Institute; Member of the Petrograd Institute of Transportation:

March 5—The Present Economic Conditions in Russia.

Cyril Maude, Actor and Manager:

April 18—The Actor and the War.

Agnes Fay Morgan, Assistant Professor of Household Science:

May 6—The Operation of National Food Control during the W

May 7—The Fuel Value of Food, and its Bearing on Food Substi tion.

May 8—The Practical Solution of the Wheat Problem.

May 9—The Conservation of Sugar and Fats.

May 10—The Value in the Diet and the Available Supply of Me Fish, and Milk.

Benzion Mossinsohn, Ph.D., Rector of the Herzl Gymnasium of Ja Palestine:

February 7, 12, 14—The Influence of Palestine on the Prophe Idea.

W. B. Murno, Ph.D., of Harvard University, representing the Natio Security League:

March 5—Why Democracy is Worth Fighting For.

John G. Neihardt, Member of the American Poetical Society:

March 4—The Western Epos.

Miss Annie S. Peck:

November 21—The South American Tour (illustrated).

·s. St. Clair Stobart, Serbian Red Cross Worker:
  February 19—My Experiences in Serbia.
Morse Stephens, Sather Professor of History:
  April 9—Jeanne d'Arc in Drama and History.
. Bogumil Vosnjak, of the University of Zagreb:
  April 23—The Future of the Jugo-Slavs.
ofessor J. C. Whitten, Head of the Department of Horticulture, University of Missouri:
  April 26—Team Work in Experiment Station Investigations.
·ed L. Wight, of the United States Steel Corporation:
  April 22—The Making and Shaping of Steel.

PHILOSOPHICAL BACKGROUND OF THE WAR LECTURES

alph Barton Perry, Professor of Philosophy in Harvard University, Mills Lecturer in Philosophy:
  April 3—The New Realism.
  April 5—The Philosophy of Nationalism.
  April 8—General Characteristics of German Thought.
  April 10—German National Traits.
  April 15—French National Traits.
  April 17—General Characteristics of French Thought.
  April 19—English National Traits.
  April 22—The Philosophical Basis of English Policy.
  April 24—General Characteristics of British Thought.
  April 26—American Democracy.
  April 29—The American Tradition and the American Ideal.

PHILOSOPHICAL UNION LECTURES

eorge P. Adams, Associate Professor of Philosophy:
  April 26—Idealism and the Present Age.
. I. Lewis, Assistant Professor of Philosophy:
  September 28—German Philosophy and the War.
acob Loewenberg, Instructor in Logic:
  February 22—Nationalism and Internationalism.
obert H. Lowie, Associate Professor of Anthropology:
  October 26—Anthropology and the War.
  November 23—Some Reactions of Defeat.
dward H. Pace, Professor of Philosophy in the Catholic University of America, Washington:
  August 31—The Problem of Natural Rights.
alph Barton Perry, Professor of Philosophy in Harvard University, Mills Lecturer in Philosophy:
  January 25—The Integrity of the Intellect.

Frederick J. Teggart, Associate Professor of History:
    March 29—History and the Individual.

Political Sciecne Lectures

Ludwik Ehrlich, Lecturer in Political Science:
    October 25—The Slavs, Past and Present.
    February 7—The War and Individualism.
    February 14—The War, the State, and Sovereignty.
    February 21—The War, Nationality, and Nationalism.
    February 28—Internationalism.
Edward Elliott, Professor of International Law and Politics:
    March 14—The War and International Law.
    March 28—The United States as a World Power.
    April 4—Great Britain: A Democratic Commonwealth.
    April 11—Democracy and World Organization.
William MacDonald, Lecturer in Political Science:
    March 7—A New American Constitution.
    April 4—Great Britain: A Democratic Commonwealth.

Weinstock Lecture

(Annual Lecture on ''The Morals of Trade'')

Mr. Frederick L. Lipman, Vice-President of the Wells Fargo-Nevad National Bank:
    October 17—Creating Capital. Money Making as an Aim in Business.

SEMICENTENNIAL CELEBRATION LECTURES

Charter Day Address

March 23

Harry Burns Hutchins, LL.D., President of the University of Michigan

Faculty Research Lecture

Rudolph Schevill, Professor of Spanish, University of California:
    March 21—Cervantes and Spain's Golden Century of Letters.

Hitchcock Lectures

George Fillmore Swain, Professor of Civil Engineering in Harvard University:
    March 18—The Quebec Bridge.
    March 19—The New Quebec Bridge.
    March 20—Subways and Rapid Transit in Cities.
    March 21—Water Power Legislation.
    March 22—Some General Principles and Disputed Points in the Valuation of Public Utility Corporations.

MISCELLANEOUS

liam Wallace Campbell, Director of the Lick Observatory and Astronomer:
March 19—Lecture on International Relations in Science.
rles Cestre, Professor of English Literature, University of Bordeaux, France:
March 19—Jean Jacques Rousseau and the Renaissance of Moral Intuition in the Eighteenth Century.
id Starr Jordan, Chancellor, Leland Stanford Junior University:
March 20—International Aspects of Certain Biological Problems of the North Pacific.
lter MacArthur, United States Shipping Commissioner, San Francisco:
March 19—International Aspects of the Labor Problem.
ph Barton Perry, Professor of Philosophy and Psychology, Harvard University, and Lecturer in Philosophy on the Mills Foundation:
March 21—What Do We Mean by Democracy?
E. Ritter, Director, Scripps Institution for Biological Research:
March 19—The Origin and Nature of the Suggestion Concerning the International Exploration of the North Pacific.
son Jackson Treat, Professor of History in Leland Stanford Junior University:
March 18—The Foundations of American Policy in the Far East.
vald Garrison Villard, Editor of *The Nation:*
March 20—Journalism and International Relations.

WEINSTOCK LECTURE

nes Hayden Tufts, Professor of Philosophy and Dean of the Senior College, University of Chicago:
March 21—Ethics of Co-operation.

VOCATIONAL CONFERENCE LECTURES

s Elizabeth Austin, Architect, San Francisco:
March 4—Architecture and Decoration.
s. Anita D. Downing, Secretary of the Federal Food Commissioner of the State of California:
February 25—Office Administration.
s. Myrtle S. Francis, President of the Theodosia B. Shepherd Company:
February 21—Women in Agriculture.
s Clotilde Grunsky, Technical Publishing Company, San Francisco:
March 14—Finding a Position.

W. L. Hathaway, Manager of the Mutual Life Insurance Company, n Francisco:
February 28—Women in Business and Finance.

C. C. Holmes, of H. C. Capwell & Company:
February 18—Salesmanship for Women.

William Leslie, Lecturer in Insurance and Actuary of the State Comp- sation Insurance Fund:
February 11—Opportunities in Statistical Work for Women.

Miss Marguerite Ogden, Attorney, San Francisco:
March 7—Women in Law.

Alice Rhode, Assistant Professor of Research Medicine, University f California Hospital:
February 14—Scientific Work for Women.

E. A. Wolcott, Civil Service Commissioner, San Francisco:
March 11—Opportunities for Women under Civil Service.

DEATHS OF MEMBERS OF THE UNIVERSITY

ewitt, George Albert, a Sophomore in the College of Letters and Science, October 8, 1917.

oth, Edward, Assistant Professor of Chemistry, August 23, 1917.

ock, McKinley Parker, a Freshman in the College of Letters and Science, February 17, 1918.

ckett, Evelyn Mildred, a Freshman in the College of Letters and Science, September 16, 1917.

ughridge, Robert Hills, Professor Emeritus of Agricultural Chemistry, July 1, 1917.

cKinley, James Wilfred, a Regent of the University, May 11, 1918.

nger, Wilhelm Robert Richard, Assistant Professor of German, October 17, 1917.

ew, George Konhall, A.B., 1916, a second-year student in the Medical School, July 6, 1917.

uitt, Dee, a Freshman in the College of Letters and Science, September 29, 1917.

BIBLIOGRAPHY

PUBLISHED WRITINGS OF OFFICERS OF THE UNIVERSITY

(July 1, 1917, to June 30, 1918)

Adams, F., Professor of Irrigation Investigations.

Extending the Area of Irrigated Wheat in California for 1918. Un Calif. Agric. Exp. Sta. Circ. no. 182, 4 pp.; Nov. 1917.

Same. Univ. Calif. Jour. Agric., vol. 5, p. 13; Oct. 1917.

Irrigation Districts in the United States. Second Pan-American Sci tific Congress. Proceed., vol. 3, pp. 162–68; 1917.

Adams, R. L., Associate Professor of Agronomy.

California's Deficiency in Farm Labor. Pacific Rural Press, vol. pp. 588–89; May 1918.

Farm Help for the Coming Harvest. Calif. Cultivator, vol. 50, no. p. 563; May 1918: vol. 50, no. 19, pp. 606–07; May 1918.

Farm Labor Situation in California. Univ. Calif. Agric. Exp. Sta. numbered pamphlet, 14 pp.; July 1917.

Labor Troubles. Sugar, vol. 19, no. 12, p. 463; Dec. 1917.

Shall We Let in the Chinaman? Country Gentleman, vol. 82, pp. 1 15, 38; Nov. 1917.

Study of Farm Labor in California [with T. R. Kelley]. Univ. Cal Agric. Exp. Sta. Circ. no. 193, 75 pp.; Mar. 1918.

Twenty-five Ways to Conserve Labor. Univ. Calif. Agric. Exp. S Unnumbered leaflet, 2 pp.; Sept. 1917.

Aitken, R. G., Astronomer in the Lick Observatory.

News from the Stars. Adolpho Stahl Lecture. Astron. Soc. of t Pacific. Publ., vol. 30, pp. 85–98; Apr. 1918.

Note on the Binary Star β 1026. *Ibid.*, vol. 29, p. 217; Oct. 1917.

Note on the Binary Star OΣ 341. *Ibid.*, vol 29, pp. 207–08; Oct. 191

Note on the Motion in Some A Double Stars. *Ibid.*, vol. 30, pp. 69–7 Feb. 1918.

Note on the Period of Sirius. *Ibid.*, vol. 30, pp. 194–95; June 1918.

One Hundred New Double Stars: Twenty-fourth List. Univ. Cal Lick Observatory Bull., vol. 9, pp. 132–35; Mar. 1918.

Two New Close Binary Stars. Astron. Soc. of the Pacific. Publ., v 30, p. 71; Feb. 1918.

RO, F. W., Instructor in Nutrition.
Composition of California Varieties of Beans [with M. E. Jaffa]. Univ. Calif. Agric. Exp. Sta. Bull. no. 294, pp. 341–43; Apr. 1918.
Constants of the Oil of Avocado. Calif. Avocado Assoc. Annual Report; 1917.
EN, J. T., Associate Professor of Greek.
First Year of Greek. N. Y., Macmillan, 1917. viii, 375 pp.
Key to the Reconstruction of the Fifth-Century Theatre at Athens. Univ. Calif. Publ. Classical Philology, vol. 5, pp. 55–58; May 1918.
Review: Peterson. *Die attische Tragödie als Bild- und Bühnenkunst.* Classical Philology, vol. 13, pp. 216–19; Apr. 1918.
AREZ, W. C., Instructor in Research Medicine.
Changes in Rythmicity, Irritability and Tone in the Purged Intestine. Jour. of Pharmacology and Experimental Therapeutics, vol. 10, pp. 365–77; Nov. 1917.
Differences in the Behavior of Segments from Different Parts of the Intestine. Amer. Jour. of Physiology, vol. 45, pp. 342–50; Mar. 1918.
Effect of Temperature on the Rhythm of Excised Segments of Intestine. *Ibid.*, vol. 44, pp. 344–51; Oct. 1917.
Is the Purgation of Patients before Operation Justifiable? Surgery, Gynecology and Obstetrics, vol. 26, pp. 651–59; June 1918.
Metabolic Gradient Underlying Intestinal Peristalsis. Amer. Jour. of Physiology, vol. 46, pp. 186–208; June 1918.
Syndrome of Mild Reverse Peristalsis. Amer. Medical Assoc. Jour., vol. 69, pp. 2018–24; Dec. 15, 1917.
I, R. L., Assistant Professor of Pediatrics.
Juvenile Paresis: A Report of Three Cases. Archives of Pediatrics, vol. 35, pp. 151–61; Mar. 1918.
Mongolism. Calif. State Jour. of Medicine, vol. 15, pp. 500–03; Dec. 1917.
DE, H. J., Instructor in Agricultural Extension.
Napa County Farm Bureau Monthly, vol. 3–4; July 1917–June 1918.
COCK, E. B., Professor of Genetics.
Genetics in Relation to Agriculture. N. Y., McGraw, 1918. ix–xx, 675 pp.
Grain Sorghum Seed. Univ. Calif. Agric. Exp. Sta. Circ. no. 177, 8 pp.; Oct. 1917.
The Rôle of Factor Mutations in Evolution. Amer. Naturalist, vol. 52, no. 614, pp. 116–28; Mar. 1918.
Selecting Corn Seed. Univ. Calif. Agric. Exp. Sta. Circ. no. 180, 7 pp.; Oct. 1917.
The Vital Question in Improving Tree Fruits by Bud Selection. Calif. Citrograph, vol. 3, no. 1, p. 4; Nov. 1917.

Baird, H. S., Assistant Professor of Dairy Industry.

Securing the Greatest Net Returns for the Dairyman. Pacific Dairy Rev., vol. 22, p. 12; Jan. 24, 1918.

Barrett, J. T., Professor of Plant Pathology.

Armillaria Root Rot of Citrus Trees. Calif. Citrograph, vol. 3, no. 4, p. 77; Feb. 1918.

Bacterial Gummosis of Apricots. Calif. State Comm. of Horticulture Monthly Bull., vol. 7, no. 3, p. 137; Mar. 1918.

Thomas Jonathan Burrill. Phytopathology, vol. 8, no. 1, pp. 1–4; Jan. 1918.

Batchelor, L. D., Professor of Plant Breeding.

Relation of the Variability of Yields of Fruit Trees to the Accuracy of Field Trials [with H. S. Reed]. Jour. of Agric. Research, vol 2 no. 5, pp. 245–83; Feb. 1918.

Berry, S. S., Research Zoologist, Scripps Institution for Biological Research

Chitons Taken by the United States Fisheries Steamer "Albatross" in the Northwest Pacific in 1906. U. S. National Museum. Proceed., vol. 54, pp. 1–18, fig. 1, pl. 1–10; Dec. 1917.

New Sonorella from Arizona. Nautilus, vol. 31, pp. 14–15; July 1917.

Note on a Preoccupied Name in Polyplacophora. *Ibid.*, vol. 31, p. 4; Apr. 1918.

Notes on West American Chitons. I. Calif. Academy of Sciences. Proceed., vol. 7, pp. 229–48, fig. 1–4; Sept. 1917.

Report on the Cephalopoda Obtained by the F. I. S. "Endeavour" in the Great Australian Bight and Other Southern Australian Localities. Australia. Fisheries. Biological Results of the Fishing Experiments Carried on by the F. I. S. "Endeavour," 1909–14, vol. 4, pp. 201–98, fig. 1–67, pl. 59–88; May 1918.

Bine, R., Assistant in Medicine.

Botulismus: Report of Two Fatal Cases. Boston Medical and Surgical Jour., vol. 177, pp. 559–60; Oct. 18, 1917.

Pleural Eosinophilia. Amer. Jour. of the Medical Sciences, vol. 55 pp. 579–85; Apr. 1918.

Present Status of Health Insurance in California. Calif. State Journal of Medicine, vol. 16, p. 4–5; Jan. 1918.

Bioletti, F. T., Professor of Viticulture and Enology.

Changes in the Chemical Composition of Grapes during Ripening [with W. V. Cruess and H. Davi]. Univ. Calif. Publ. Agric. Sciences vol. 3, no. 6, pp. 103–30; Mar. 9, 1918.

Coloring of Tokay Grapes. Pacific Rural Press, vol. 95; Jan. 19, 1918.

Cordon Pruning. Calif. State Board of Viticultural Comm. Bull. no. 11, pp. 12–19; May 25, 1918.

Improvements on Methods of Pickling Olives [with W. V. Cruess]. Univ. Calif. Agric. Exp. Sta. Bull. no. 289, pp. 195–200; Dec. 1917.

Notes on the Ohanez Grape. Calif. State Board of Viticultural Comm. Bull. no. 11, pp. 10–12; May 25, 1918.

Origin of Olive Canning. Fig and Olive Jour., vol. 3, no. 1, pp. 15–16; June 1918.

Preparation of Olives without Lye. Olive Jour., vol. 2, no. 8, p. 3; Jan. 1918.

Protecting Vines from Frost. Sun-Maid Herald, vol. 3, no. 6, p. 4; Jan. 1, 1918.

Pruning Seedless Raisin Grapes. *Ibid.*, vol. 3, no. 6, p. 4; Jan. 1, 1918.

Pruning the Seedless Grapes. Univ. Calif. Agric. Exp. Sta. Circ. no. 191, pp. 1–12; Jan. 1918.

Rapid Method of Pickling Ripe Olives. Olive Jour., vol. 2, no. 3, p. 2; Aug. 1917.

Tests of Ripe Grapes. Sun-Maid Herald, vol. 3, no. 1, p. 11; Aug. 1917.

Topping and Pinching Vines [with F. C. H. Flossfeder]. Univ. Calif. Agric. Exp. Sta. Bull. no. 296, pp. 371–84; May 1918.

Universal Military Training. National Economic League Quarterly, vol. 3, p. 23; Nov. 1917.

Wage-earning Occupations for Students in Agriculture. School and Society, vol. 7, pp. 261–63; Mar. 2, 1918.

ASDALE, W. C., Associate Professor of Chemistry.

Equilibria in Solutions Containing Mixtures of Salts. I. The System Water and the Sulfates and Chlorides of Sodium and Potassium. Jour. of Industrial and Engineering Chemistry, vol. 10, pp. 344–47; May 1918.

The Separation of the Chlorides and Sulfates of Sodium and Potassium by Fractional Crystallization. *Ibid.*, vol. 10, pp. 347–53; May 1918.

LTON, H. E., Professor of American History and Acting Curator of the Bancroft Library.

Cabrillo and Viscaíno at Santa Catalina Island. The Islander, Avalon; 1918.

Father Kino's Historical Memoir of the Southwest. Cleveland, O., A. H. Clark, 1918. 2 vols.

General James Wilkinson as Advisor to Emperor Iturbide. Hispanic American Historical Rev., vol. 1, no. 2; May 1918.

Map of Pimería Alta, 1687–1706. Univ. Calif. Map Ser., no. 6; 1918.

The Mission as a Frontier Institution in the Spanish American Colonies. Faculty Research Lecture delivered in Wheeler Hall, Charter Day, March 23, 1917. Amer. Historical Rev., vol. 23, no. 1, pp. 42–61; Oct. 1917.

The Writing of California History. Grizzly Bear; May 1916.

Bradley, C. B., Professor of Rhetoric, Emeritus.

Junipers of Lake Valley. Sierra Club Bull., vol. 10, no. 3, pp. 298–30 Jan. 1918.

The Twist of Wood-Fiber in the Tamrac Pine. Madroño, vol. 1, no. pp. 63–66; Apr. 1918.

Bradley, D. E., Assistant in Bacteriology.

Simple Methods for Prolonging the Viability of Meningococcus Cu tures. Amer. Medical Assoc. Jour., vol. 70, no. 24, pp. 1816–1 June 15, 1918.

Bruce, H. L., Assistant Professor of English Composition.

Period of Greatest Popularity of Voltaire's Plays on the English Stag Modern Language Notes, vol. 33, pp. 20–33; Jan. 1918.

Tennyson and Death. Sewanee Rev., vol 25, pp. 443–56; Oct. 1917.

Voltaire on the English Stage. Univ. Calif. Publ. Modern Philolog vol. 8, no. 1, pp. 1–152; June 1918.

Bryan, L., Assistant in Roentgenology.

Roentgen Pleuritis. Amer. Jour. of Roentgenology, vol. 5, pp. 87–8 Feb. 1918.

Bryant, H. C., Economic Ornithologist.

Deer Licks of the Trinity National Forest Game Refuge. Calif. Fis and Game, vol. 4, pp. 21–25; Jan. 28, 1918.

Evidence on the Food of Hawks and Owls in California. Condor, vo 20, pp. 126–27; May 1918.

Forestry, Fish and Game Exhibit, California State Fair, Septemb 8–16, 1917. Calif. Forestry, vol. 1, p. 44; Oct. 1917.

Game Conservation in California. Pomona College Quarterly Magazin vol. 6, pp. 15–18; Oct. 1917.

Mountain Lion Hunting in California. Calif. Fish and Game, vol. pp. 160–64; Oct. 27, 1917.

Protection of Fish and Game. Calif. State Board of Forestry. Han book of Forest Protection, p. 41–45; 1918.

Review: Crandall. *Pets, Their History and Care.* Calif. Fish and Gam vol. 3, pp. 175–76; Oct. 27, 1917.

Review: Wood. *The Fundus Oculi of Birds, Especially as Viewed by t Opthalmoscope: A Study in Comparative Anatomy and Physiolog* Condor, vol. 19, pp. 174; Sept. 25, 1917.

Shall the Deer be Exterminated? Los Angeles Times, Illustrated Mag zine, vol. 14, pp. 10, 17; Apr. 21, 1918.

Stomach Contents of an Oregon Ruffed Grouse. Condor, vol. 19, p 168; Sept. 1917.

Study of the Races of the White-fronted Goose [with H. S. Swarth Univ. Calif. Publ. Zoology, vol. 17, pp. 209–22; Oct. 1917.

Wild Life Conservation in California. Amer. Game Protective Asso Bull., vol. 7, p. 21; Jan. 1918.

, J. S., Professor of Agricultural Chemistry.

ater Extraction of Soils as Criteria of Their Crop-producing Power. Jour. of Agric. Research, vol. 12, no. 6, pp. 297–309; Feb. 1918.

IETT, T. C., Assistant Professor of Physiology.

he Activation of Muscle Catalase by Liver. Amer. Jour. of Physiology, vol. 46, pp. 63–66; May 1918.

oes the Liver Secrete a Catalase Accelerator? Soc. for Experimental Biology and Medicine. Proceed., vol. 15, pp. 80–81; Feb. 1918.

art Played by the Hydroxy-Benzol Radicle in the Acceleration of the Growth of the Carcinomata by Cholesterol and Tethelin [with T. B. Robertson]. Jour. of Cancer Research, vol. 3, p. 75; Jan. 1918.

IOUN, G. M., Assistant Professor of Greek.

ιαμαρτυρία, παραγραφή and the Law of Archinus. Classical Philology, vol. 13, pp. 169–85; Apr. 1918.

PBELL, W. W., Director Lick Observatory.

rocker Eclipse Expedition, 1918. Astron. Soc. of the Pacific. Publ., vol. 30, p. 195; 1918.

he Plundered Chinese Astronomical Instruments on the German Kaiser's Lawn at Potsdam. N. Y. Times; Jan. 6, 1918; reprinted San Francisco Examiner; Jan. 20, 1918.

reliminary Results Obtained at the Total Solar Eclipse of June 8, 1918. N. Y. Times; June 10, 1918.

he Problem of Mars. Astron. Soc. of the Pacific. Publ., vol. 30, p. 133; 1918.

Remarkable Coincidence. *Ibid.*, vol. 29, p. 219; 1917.

ome Observations of Aurorae at Mount Hamilton. *Ibid.*, vol. 29, p. 218; 1917.

he Spectrum and Radial Velocity of the Spiral Nebula N.G.C. 4151 [with G. P. Paddock]. *Ibid.*, vol. 30, p. 68; 1918.

he War and the Weather. San Francisco Examiner; Sept. 1917; reprinted, Astron. Soc. of the Pacific. Publ., vol. 29, p. 200; 1917.

MAN, C. E., Assistant Professor of Latin-American and California History.

ll Americas to Enter War? San Francisco Bulletin; Dec. 12, 1917.

he Archivo General de Indias. Southwestern Historical Quarterly, vol. 21, pp. 145–55; Oct. 1917.

escription of Certain *legajos* in the Archivo General de Indias. Part I. Hispanic American Historical Rev., vol. 1, pp. 216–36; May 1918.

lited with an Introduction: Sixteen Articles on the History of California, by Members of the Class in California History. Grizzly Bear, vol. 21, no. 3–vol. 23, no. 2; July 1917–June 1918.

ounding of the Review. Hispanic American Historical Rev., vol. 1, pp. 8–23; Feb. 1918.

History of Mining in California. Grizzly Bear, vol. 21, no. 5, p
Sept. 1917.

Latin America and the War. Daily Californian; Sept. 24, 1917.

Latin America Should Fight. *Ibid.;* Apr. 12, 1918.

Same. Berkeley Gazette; Apr. 12, 1918.

Map of Spain and Portugal. Univ. Calif. Map Ser., no. 7; June 1

Native Sons' Fellowships. Southwestern Historical Quarterly, vol.
pp. 389–94; Apr. 1918.

Same. Grizzly Bear, vol. 21, no. 4, p. 8; Aug. 1917.

Palmares, the Negro Numantia. Jour. of Negro History, vol. 3, pp.
32; Jan. 1918.

A Producing Class in California History. Grizzly Bear, vol. 22, n
p. 8; Mar. 1918.

Same. History Teacher's Magazine, vol. 9, p. 84–86; Feb. 1918.

Chinard, C. G., Professor of French.

L'Amérique et la guerre. Revue bleue, vol. 55, pp. 489–93; Aug. 25, 1

Description of the Library of French Thought. Univ. Calif. Ded
tion of the Library of French Thought, pp. 27–30; 1918.

L'exotisme américain dans l'oeuvre de Chateaubriand. Pa
Hachette, 1918. 305 pp.

La France et la guerre. Berkeley, 1918. 24 pp.

France for the Soldier, translated into English by J. Loewenb
Univ. Calif. Military Information Office, 1918. 24 pp.

Handbook of English and French Terms for the Use of Military A
ators [with E. R. Hedrick]. Ed. 2. Univ. Calif. Press, 1918. 48

Handbook of English and French Terms for the Use of Relief Work
in France [with E. R. Hedrick]. Ed. 2, revised. Univ. Calif. Mi
tary Information Office, 1918. 54 pp.

Pour mieux connaître la France. Berkeley, Romanic Languages Tea
ers' Assoc., 1918. 25 pp.

Chislett, W., Jr., Instructor in English.

Classical Influence in English Literature in the Nineteenth Cent
and Other Essays and Notes. Bost., Stratford Co., 1918. 150 pp.

Christie, A. W., Instructor in Agricultural Chemistry and Assistant
Military Science and Tactics.

Volumetric Determination of Sulfates in Water Extracts of Soils [w
J. C. Martin]. Soil Science, vol. 4, no. 6, pp. 477–79; Dec. 1917.

Coit, J. E., Professor of Citriculture.

Bud Selection and the Recording of Nursery Stock. Calif. Citrogra
vol. 3, no. 1, p. 4; Nov. 1917.

June Drop of Washington Navel Oranges [with R. W. Hodgso
Univ. Calif. Agr. Exp. Sta. Bull. no. 290, pp. 203–12; Jan. 1918

Review: Fletcher. *The Strawberry in North America.* Plant Wo
vol. 21, p. 1; Jan. 1918.

LLINS, H. H., Research Assistant in the Scripps Institution for Biological Research.

Autotomy of the Tail in Rodents [with F. B. Sumner]. Biological Bull., vol. 34, pp. 1–6; Jan. 1918.

NDIT, I. J., Assistant Professor of Citriculture.

Avocado Culture. Univ. Calif. College of Agric. Correspondence Course no. 35. Ten lessons; Oct. 1917.

The Avocado in Central and Northern California. Calif. Avocado Assoc. Annual Report, 1917, pp. 35–39; Apr. 30, 1918.

Drying of Figs. Univ. Calif. Agric. Exp. Sta. Unnumbered leaflet, 1 p.; 1917.

History of the Fig in California. Fig and Olive Jour., vol. 2; May–June 1918.

ORNER, G. W., Assistant Professor of Anatomy.

Maturation of the Ovum in Swine. Anatomical Record, vol. 13, pp. 109–12; July 1917.

On the Origin of the Corpus luteum of the Sow from both Granulosa and Theca interna. Amer. Assoc. of Anatomists. Proceed. Anatomical Record., vol. 14, p. 33; Jan. 1918.

ORT, W. W., Assistant Professor of Zoology.

Dangers to California from Oriental and Tropical Parasitic Diseases. Calif. State Board of Health. Spec. Bull. no. 29, 12 pp.; May 1918.

Excretory System of *Agamodistomum Marcianae* (La Rue), the Agamodistome Stage of a Forked-tailed Cercaria. Jour. of Parasitology, vol. 4, pp. 130–34; Mar. 1918.

Homologies of the Excretory System of the Forked-tailed Cercariae: A Preliminary Report. *Ibid.*, vol. 4, pp. 49–57; Dec. 1917.

Laboratory Instructions for Zoology 1A [with C. A. Kofoid]. Univ. Calif. Syllabus Ser., no. 87, 77 pp.; Aug. 1917.

Sanitation in Mines for the Prevention and Eradication of Hookworm [with C. A. Kofoid]. Calif. State Board of Health. Spec. Bull. no. 28, 12 pp.; Mar. 1918.

ORY, C. L., John W. Mackay, Jr. Professor of Electrical Engineering, Consulting Electric Lighting and Heating Engineer, and Dean of the College of Mechanics.

Outside Professional Engagements of Members of Professional Faculties. Assoc. of Amer. Universities. Jour. of Proceed. and Addresses, 19th Annual Conference, pp. 87–94; 1917.

ORY, H. E., Assistant Professor of English.

Carlton H. Parker: Frater, Avec atque vale. Univ. Calif. Chronicle, vol. 20, pp. 244–51; Apr. 1918.

An Economist and Patriot. Nation, vol. 106, pp. 478–79; Apr. 18, 1918.

Edmund Spenser, a Critical Study. Univ. Calif. Publ. Modern Philology, vol. 5, 478 pp.; Mar. 1918.

CRANDALL, W. C., Business Agent of the Scripps Institution for Biolog Research.

Kelp Resources of Southern California. San Diego Union; Jan. 1, 19

Sardine Canneries Southern California. Pacific Fisherman Yearbo Jan. 1918.

CRAWFORD, R. T., Associate Professor of Practical Astronomy.

Important Epochs in the Development of Astronomy. Astron. Soc. f the Pacific. Publ., vol. 29, p. 232; Dec. 1917.

Note on Comet *b* 1916 (Wolf). *Ibid.*, vol. 29, p. 209; Oct. 1917.

Notes from the Students' Observatory, Berkeley. *Ibid.*, vol. 29, p. 1 Aug. 1917.

Students' Opinions of the Educational Advantages of the Study f Astronomy. *Ibid.*, vol. 29, pp. 174–76; Aug. 1917.

CROSS, I. B., Associate Professor of Economics.

Carlton Hubbel Parker. Calif. Alumni Fortnightly; Apr. 6, 1918.

Collective Bargaining and Trade Agreements in the Brewery, Teami Metal and Building Trades of San Francisco. Univ. Calif. Pu Economics, vol. 4, no. 4, pp. 233–364; May 1918.

Review: Hanna. *Labor Laws and Their Administration in the Pac States.* Amer. Economic Rev., vol. 7, no. 3, pp. 701–02; Sept. 19

Review: Pennybacker, Fairbank and Draper. *Convict Labor for Ro Work.* Jour. of Criminal Law and Criminology, vol. 8, no. 2, 316–17; July 1917.

Trade Agreements as an Aid to Industrial Peace. Commonwealth C of Calif. Trans., vol. 12, no. 11, pp. 482–87; Dec. 1917.

CRUESS, W. V., Assistant Professor of Zymology.

Botulinus Poisoning. Calif. Cultivator, vol. 50, no. 20, p. 625; May 1918.

Candied Fruits. *Ibid.*, vol. 49, no. 13, p. 341; Sept. 29, 1917.

Same. Univ. Calif. Agric. Exp. Sta. Unnumbered leaflet, 1 p.; 19

Candied Fruits as a Side Line for Confectioners. Western Conf-tioner, vol. 4, no. 6, p. 20; Mar. 1918.

Canning Fruit in Glass Jars or Wax-Top Cans [with F. T. Biolett Univ. Calif. Agric. Exp. Sta. Unnumbered leaflet; 1917.

Canning of Fruit and Vegetables [with F. T. Bioletti]. *Ibid.* U numbered leaflet, 1 p.; 1917.

Changes in the Chemical Composition of Grapes during Ripening [w F. T. Bioletti and H. Davi]. Univ. Calif. Publ. Agric. Sciences, v 3, no. 6, pp. 103–30; Mar. 9, 1918.

Drying of Potatoes, Sweet Potatoes, Squash and Cabbage. Un Calif. Agric. Exp. Sta. Unnumbered leaflet, 1 p.; Aug. 1917.

Drying of Tomatoes, Green Peas and Corn. Univ. Calif. Agric. E Sta. Unnumbered leaflet, 1 p.; 1917.

Drying Tomatoes [with J. R. Zion]. Calif. Cultivator, vol. 50, no. 23, p. 693; June 8, 1918.

Experiments upon Drying Fruit without Sulfuring. Pacific Rural Press, vol. 95, no. 21, p. 669; May 25, 1918.

Farm Curing of Meats. Calif. Cultivator, vol. 50, no. 40, p. 113; Jan. 26, 1918.

Fruit Juices [with F. T. Bioletti]. Univ. Calif. Agric. Exp. Sta. Unnumbered leaflet, 1 p.; 1917.

Fruit Vinegar. Pacific Rural Press, vol. 94, no. 11, p. 272; Sept. 15, 1917.

Grape Syrup Investigations. Sun-Maid Herald, vol. 3, no. 10, p. 30; May 1918.

Home and Farm Canning (Revision). Univ. Calif. Agric. Exp. Sta. Circ. no. 158, 32 pp.; July 1917.

Home-made Vinegar [with F. T. Bioletti]. Univ. Calif Agric. Exp. Sta. Unnumbered leaflet, 2 pp.; Nov. 1917.

Improvements in Methods of Pickling Olives [with F. T. Bioletti]. Univ. Calif. Agric. Exp. Sta. Bull. no. 289, pp. 195–200; Dec. 1917.

Jellies and Jelly Stocks. Calif. Cultivator, vol. 49, no. 6, p. 140; Aug. 11, 1917.

Jelly Stocks [with F. T. Bioletti]. Univ. Calif. Agric. Exp. Sta. Unnumbered leaflet, 1 p.; 1917.

Methods of Food Preservation.

I. Canning Fruits and Vegetables. Univ. Calif. Agric. Exp. Sta. Unnumbered leaflet, 4 pp.; Aug. 1917.

II. Fruit Juices and Jellies. Univ. Calif. Agric. Exp. Sta. Unnumbered leaflet, 4 pp.; Aug. 1917.

III. Drying Fruits and Vegetables. Univ. Calif. Agric. Exp. Sta. Unnumbered leaflet, 4 pp.; Aug. 1917.

IV. Candying Fruit, Making Fruit Vinegar and Salting Vegetables. Univ. Calif. Agric. Exp. Sta. Unnumbered leaflet, 4 pp.; Aug. 1917.

Preservation of Tomatoes in Water Glass. Pacific Rural Press, vol. 94, no. 17, p. 432; Oct. 27, 1917.

Preserving Vegetables. Calif. Cultivator, vol. 49, no. 3, pp. 58–59; July 21, 1917.

Refining Inferior Olive Oils [with C. C. Scalione]. Olive Jour., vol. 2, no. 8, p. 5; Jan. 1918.

Results of Olive Pickling Experiments [with J. R. Zion]. *Ibid.*, vol. 2, no. 7, pp. 8–9; Dec. 1917.

Results of Olive Pickling Investigations [with J. R. Zion]. *Ibid.*, vol. 2, no. 5, p. 2; Oct. 1917.

Salt Curing of Olives. *Ibid.*, vol. 2, no. 7, p. 5; Dec. 1917.

Sterilization of Meat in Jars. Univ. Calif. Agric. Exp. Sta. Unnum bered leaflet; 1917.

Syrup from Sweet Sorghum. Univ. Calif. Agric. Exp. Sta. Circ. n 198, 16 pp.; June 1918.

Tomato Paste. Univ. Calif. Agric. Exp. Sta. Unnumbered leaflet, 1 p 1917.

Use of High Temperatures, Aerated Liquids, and Circulating Liqui in Olive Pickling. Olive Jour., vol. 2, no. 6, pp. 3–4; Nov. 1917.

Vinegar from Fruit Cuttings. Calif. Cultivator, vol. 49, no. 14, p. 36 Oct. 6, 1917.

Vinegar from Waste Fruits. Univ. Calif. Agric. Exp. Sta. Bull. n 287, pp. 169–84; Oct. 1917.

Curtis, H. D., Astronomer at the Lick Observatory.

Absorption Effects in the Spiral Nebulae. National Academy o Sciences. Proceed., vol. 3, pp. 678–82; Dec. 1917.

Dark Nebulae. Astron. Soc. of the Pacific. Publ., vol. 30, pp. 65–6 Feb. 1918.

Finding List for General Catalog Numbers. *Ibid.*, vol. 29, p. 180; Au 1917.

New Stars in Spiral Nebulae. *Ibid.*, vol. 29, pp. 180–82; Aug. 1917.

Novae in Spiral Nebulae and the Island Universe Theory. *Ibid.*, vo 29, pp. 206–07; Oct. 1917.

The Number of the Spiral Nebulae. *Ibid.*, vol. 30, pp. 159–61; Ap 1918.

A Spiral Nebula in the Milky Way. *Ibid.*, vol. 30, p. 161; Apr. 1918.

Three Novae in Spiral Nebulae. Univ. Calif. Lick Observatory Bull vol. 9, pp. 108–10; Oct. 1917.

Daggett, S., Professor of Railway Economics.

Recent Railroad Failures and Reorganizations. Quarterly Jour. o Economics, vol. 32, pp. 446–86; May 1918.

Recent War Legislation. Univ. Calif. Chronicle, vol. 20, pp. 16–35 Jan. 1918.

Davidson, J. B., Professor of Agricultural Engineering.

Construction of the Wood Hoop Silo [with J. E. Stiles]. Univ. Calif Agric. Exp. Sta. Circ. no. 173, 16 pp.; Sept. 1917.

Report of Tests of Tractive Resistance on Various Road Surfaces Calif. State Automobile Assoc. Special Circ., 16 pp.; 1917.

Some Experiments in the Use of Electric Power in Field Work [wit F. E. Boyd]. Amer. Soc. of Agric. Engineers. Transactions; 1917

Same. General Electric Rev., vol. 21, no. 2, pp. 130–33; 1917.

Davidson, P., Teaching Fellow in Zoology.

The Musculature of *Heptanchus maculatus*. Univ. Calif. Publ. Zoology vol. 18, no. 10, pp. 151–70; Mar. 9, 1918.

s, E. F., Instructor in Mineralogy and Geology.

he Franciscan Sandstone. Univ. Calif. Publ. Bull. of the Dept. of Geology, vol. 11, pp. 1–44; Mar. 1918.

egistration of Earthquakes at the Berkeley Station and at the Lick Observatory Station from October 1, 1916, to March 31, 1917. Univ. Calif. Publ. Seismographic Sta. Bull., vol. 1, pp. 273–95; Oct. 1917.

egistration of Earthquakes at the Berkeley Station and at the Lick Observatory Station from April 1, 1917, to September 30, 1917. *Ibid.*, vol. 1, pp. 297–324; May 1918.

NG, E. R., Instructor in Entomology.

pparatus for Bee Culture. Calif. Cultivator, vol. 49; Dec. 22, 1917.

ean and Pea Weevils. *Ibid.*, vol. 50, no. 8, pp. 244–45; Feb. 23, 1918.

ee Culture in California. *Ibid.*, vol. 49; Nov. 3, 1917.

ontrol of Red Spider. Calif. State Comm. of Horticulture. Monthly Bull., vol. 7, no. 4, pp. 198–201; Apr. 1918.

ontrol of the Pocket Gopher in California. Univ. Calif. Agric. Exp. Sta. Bull. no. 281, pt. 2, pp. 14–15; July 1917.

Fumigation of Stored Grain, Dried Fruits and Other Products. Univ. Calif. Agric. Exp. Sta. Unnumbered leaflet, 7 pp.; Dec. 1917.

Hydrocyanic Acid Gas as a Soil Fumigant. Jour. of Agric. Research, vol. 11, no. 9, pp. 421–36; Nov. 26, 1917.

Insects and Other Enemies of Beans. Univ. Calif. Agric. Exp. Sta. Bull. no. 294, pp. 344–47; Apr. 1918.

Same. Univ. Calif. Agric. Exp. Sta. Unnumbered leaflet, 4 pp.; Aug. 1917.

Insects in Stored Grain. Calif. Cultivator, vol. 50, no. 10; Mar. 9, 1918.

Potato Tuber Moth. Calif. State Comm. of Horticulture. Monthly Bull., vol. 7, no. 3, pp. 112–19; Mar. 1918.

Protecting Stored Food from Insects. Official Food Bull., San Francisco, Cal.; May 8, 1918.

Spraying Citrus Orchards with Oil. Calif. Cultivator, vol. 49, p. 27; July 1917.

TSCH, M. E., Assistant Professor of Latin.

Roman War Bread. Classical Jour., vol. 13, pp. 527–29; Apr. 1918.

Suetonius and Caesar's German Campaigns. Amer. Philological Assoc. Transactions, 1916, vol. 47, pp. 23–33; Sept. 1917.

The Women of Caesar's Family. Classical Jour., vol. 13, pp. 502–14; Apr. 1918.

GHERTY, J. E., Associate Professor of Poultry Husbandry.

Poultry as a Means of Conserving the Food Supply. Univ. Calif. Agric. Exp. Sta. Unnumbered leaflet.

Poultry on the Farm. Univ. Calif. Agric. Exp. Sta. Circ. no. 186, 4 pp.; Nov. 1917.

Suggestions for Increasing Egg Production in a Time of High Feed Prices. *Ibid.*, no. 197, 7 pp.; Apr. 1918.

EAKLE, A. S., Associate Professor of Mineralogy.

Minerals Associated with the Crystalline Limestone at Crestmc Riverside County, California. Univ. Calif. Publ. Bull. of the De of Geology, vol. 10, pp. 327–60; Oct. 1917.

Mines and Mineral Resources of Alpine County. Calif. State Mini Bureau. Report for 1915–1916, pp. 1–23; 1917.

Mines and Mineral Resources of Mono County [with R. P. McLau lin]. *Ibid.*, pp. 131–71; 1917.

EASTMAN, E. D., Instructor in Chemistry.

Heat Capacity of Electro Positive Metals and the Thermal Energy Free Electrons [with G. N. Lewis and W. H. Rodebush]. Natio Academy of Sciences. Proceed., vol. 4, pp. 25–29; Feb. 1918.

Specific Heats at Low Temperatures of Sodium, Potassium, Magnesi and Calcium Metals, and of Lead Sulfide [with W. H. Rodebusl Amer. Chemical Soc. Jour., vol. 40, pp. 489–500; Mar. 1918.

EHRLICH, L., Lecturer in Political Science.

Austria-Hungary: Its Peoples and Government. Univ. Calif. Chronic vol. 20, pp. 176–96; Apr. 1918.

British Emergency Legislation during the Present War. Calif. La Rev., vol. 5, pp. 433–51; Sept. 1917.

The Slavs, Past and Present. Univ. Calif. Chronicle, vol. 19, pp. 418–4 Oct. 1917.

The War and the English Constitution. *Ibid.*, vol. 19, pp. 250–69; Ju 1917.

ELLIOTT, E., Professor of International Law and Politics.

The Future of International Law. Calif. Law Rev., vol. 6, pp. 268–7 May 1918.

ESSENBERG, Mrs. C. E., Zoologist and Librarian, Scripps Institution f Biological Research.

Description of Some New Species of Polynoidae from the Coast of Ca fornia. Univ. Calif. Publ. Zoology, vol. 18, pp. 45–60, pl. 2–3; Oc 1917.

Factors Controlling the Distribution of the Polynoidae of the Paci Coast of North America. *Ibid.*, vol. 18, pp. 171–238; Mar. 1918.

New Species of Amphinomidae from the Pacific Coast. *Ibid.*, vol. 1 pp. 61–74; Oct. 1917.

ESSIG, E. O., Assistant Professor of Entomology.

Aphididae of California. Univ. Calif. Agric. Exp. Sta. Technical Bu letins. Entomology, vol. 1, pp. 301–46; July 1917.

The Tomato and Laurel Psyllid. Jour. of Economic Entomology, vo 10, pp. 433–44; Aug. 1917.

ETCHEVERRY, B. A., Professor of Irrigation Engineering.

Irrigation Practice and Engineering. Reprinted, with Additions an Corrections. N. Y., McGraw, 1918. Vols. 1–2.

NS, G. H., Assistant Clinical Professor of Medicine.

Critical Analysis of the Treatment of Tuberculosis with Copper and Potassium Cyanide. Medical Record, vol. 92, p. 575; Oct. 6, 1917.

Multiple Serositis. Report of a Case with Autopsy Findings; Discussion of its Classification. Amer. Jour. of the Medical Sciences, vol. 155, p. 553; Apr. 1918.

, P. B., Assistant Professor of Romanic Philology.

Brief Mention: Nitze and Wilkins. *Handbook of French Phonetics.* Modern Language Notes, vol. 33, p. 384; June 1918.

Review: Holbrook. *Living French. Ibid.*, vol. 33, pp. 366–76; June 1918.

ISCHNER, E. C., Instructor in Pediatrics.

Observations on the Presence of the Bacillus abortus bovinus in Certified Milk. Preliminary Notes [with K. F. Meyer]. Amer. Jour. of Diseases of Children, vol. 14, pp. 157–73; Sept. 1917.

Report of the Committee on Veterinary Inspections and Protection against Tuberculosis, of the American Association of Medical Milk Commissions, 1916–17. Amer. Veterinary Medical Assoc. Jour., n.s., vol. 5, no. 3, pp. 268–88; Dec. 1917.

Some Problems in Starch Digestion in Infancy and Childhood [with A. E. Meyers]. Archives of Pediatrics, vol. 35, no. 3, pp. 129–41; Mar. 1918.

Teaching of Pediatrics from the Standpoint of the Student. Assoc. of Amer. Teachers of the Diseases of Children. Transactions, vol. 11, pp. 36–41; June 1917.

SSFEDER, F. C. H., Assistant Professor of Viticulture and Superintendent of Grounds, Univ. Farm.

Topping and Pinching Vines [with F. T. Bioletti]. Univ. Calif. Agric. Exp. Sta. Bull. no. 296, pp. 371–84; May 1918.

CE, J. N., Assistant Professor of Epidemiology.

Age of Susceptibility to Infection by Tubercle Bacilli. Public Health Nurse Quarterly, vol. 9, pp. 389–91; Oct. 1917.

Alkaline Glycerin as a Cause of Smallpox Vaccination Failure. Calif. State Board of Health. Monthly Bull., vol. 13, pp. 458–61; May 1918.

How is Your Municipality Spending its Dollar for Public Health? *Ibid.*, vol. 13, pp. 250–55; Dec. 1917.

Public Health and the Standard of Living. Public Health Nurse Quarterly, vol. 10, pp. 146–50; Apr. 1918.

Regulations for the Prevention and Control of Smallpox [with W. A. Sawyer]. Calif. State Board of Health. Monthly Bull., vol. 13, pp. 311–19; Jan. 1918.

Responsibility of the Vaccinator in Overcoming the Rational Ob tions to Smallpox Vaccination [with I. M. Stevens]. Jour. Laboratory and Clinical Medicine, vol. 3, pp. 220–25; Jan. 1918.

Smallpox Vaccination at the University of California. *Ibid.*, vol pp. 599–606; June 1917.

Some Conditions in the School Environment Which May Affect Child's Health. Lecture 8 in "The School Custodian." Oakl Cal. Dept. of Public Instruction. Bull. no. 8, pp. 18–20; June 1

Frandy, M. L. J., Assistant in Physics.

A Hydro-Electric Power System. 70 pp.; Apr. 1918.

Freeborn, S. B., Assistant Professor of Entomology.

Malaria Problem in the Rice Fields. Calif. State Jour. of Medic vol. 15, p. 412; Oct. 1917.

Mosquito Abatement Districts in California. Calif. State Board Health. Monthly Bull., vol. 13, pp. 455–59; Apr. 1918.

Rice Fields as a Factor in the Control of Malaria. Jour. of Econo Entomology, vol. 10, pp. 354–59; June 1917.

Frost, H. B., Instructor in Plant Breeding.

Method of Numbering Plants in Pedigree Cultures. Amer. Natura vol. 51, pp. 429–37; July 1917.

Garthwaite, E. L., Assistant in Agricultural Extension, Assistant F Advisor.

Curing Hams and Bacon. Kern County Farm Bureau Monthly, vo no. 6; Jan. 1918.

Farm Bureau Auction Sales. *Ibid.*, vol. 2, no. 7; Mar. 1918.

Plant Sweet Sorghums Now. *Ibid.*, vol. 2, no. 9; May 1918.

Same. Delano Record; Apr. 1918.

Gayley, C. M., Professor of the English Language and Literature.

America to England: A Poem. Argonaut; Dec. 29, 1917.

For These We Give Thanks. *Ibid.;* Dec. 8, 1917.

Shakespeare and the Founders of Liberty in America. N. Y., Mac lan, 1917. 270 pp.

Gericke, W. F., Assistant Professor of Soil Chemistry.

Copper and Zinc as Antagonistic Agents to the "Alkali" Salt Soils [with C. B. Lipman]. Amer. Jour. of Botany, vol. 5, n pp. 151–70; Apr. 1918.

Does $CaCO_3$ or $CaSO_4$ Treatment Affect the Solubility of the S Constituents? [with C. B. Lipman]. Univ. Calif. Publ. Agric. Scien vol. 3, no. 10, pp. 271–82; June 1918.

Effects of Rest and No-Rest Periods upon Growth of Solanum. Bo ical Gazette, vol. 65, no. 4, pp. 344–53; Apr. 1918.

Significance of the Sulfur in Sulfate of Ammonia Applied to Certain Soils [with C. B. Lipman]. Soil Science, vol. 5, no. 1, pp. 81–86; Jan. 1918.

Some Effects of Successive Cropping to Barley. Amer. Soc. of Agronomy. Jour., vol. 9, no. 7, pp. 325–32; Oct. 1917.

SON, G. E., Assistant Professor of Chemistry.

The Entropy of the Elements and the Third Law of Thermodynamics [with G. N. Lewis]. Amer. Chemical Soc. Jour., vol. 39, pp. 2554–81; Dec. 1917.

FORD, E. W., Associate Curator of the Anthropological Museum.

Clans and Moieties in Southern California. Univ. Calif. Publ. Amer. Archaeology and Ethnology, vol. 14, pp. 155–219; Mar. 1918.

ARD, W., Instructor in French.

Définition et origines françaises du transcendantalisme considéré sous son aspect social. Univ. Calif. Publ. Modern Philology, vol. 8, no. 2, pp. 153–226; June 1918.

AY, G. P., Assistant Professor of Entomology and Chemist in Insecticide Laboratory.

Consumption and Cost of Economic Poisons in California in 1916. Calif. State Comm. of Horticulture. Monthly Bull., vol. 7, pp. 140–44; Mar. 1918.

Same. Jour. of Industrial and Engineering Chemistry, vol. 10, pp. 301–06; Apr. 1918.

Lead Arsenates, Stone Fruits, and the Weather. Jour. of Economic Entomology, vol. 10, pp. 385–92; Aug. 1917.

Revised Compatibility Chart of Insecticides and Fungicides. Univ. Calif. Agric. Exp. Sta. Circ. no. 195, 3 pp.; Mar. 1918.

Spraying for the Control of Wild Morning-Glory within the Fog Belt. *Ibid.*, no. 168, 7 pp.; Sept. 1917.

Wettable Sulfurs. Calif. State Comm. of Horticulture. Monthly Bull., vol. 7, pp. 191–92; Apr. 1918.

INNELL, J., Associate Professor of Zoology and Director of the California Museum of Vertebrate Zoology.

Distributional List of the Amphibians and Reptiles of California [with C. L. Camp]. Univ. Calif. Publ. Zoology, vol. 17, pp. 127–208; July 1917.

Name of the American Barn Swallow. Condor, vol. 20, p. 92; Mar. 1918.

New Race of Fox Sparrow from the Vicinity of Mono Lake, California [with T. I. Storer]. *Ibid.*, vol. 19, pp. 165–66; Sept. 1917.

Niche–Relationships of the California Thrasher. Auk, vol. 34, pp. 427–33; Oct. 1917.

Review: Bergtold. *A Study of the Incubation Periods of Birds.* Cond vol. 20, p. 95; Mar. 1918.

Review: Murphy. *Natural History Observations from the Mexican P tions of the Colorado Desert. Ibid.*, vol. 20, p. 97; Mar. 1918.

Review: Pearson. *Birds of America. Ibid.*, vol. 20, pp. 97–99; M 1918.

Review: Shelton. *A Distributional List of the Land Birds of W Central Oregon. Ibid.*, vol. 19, pp. 174–75; Sept. 1917.

Seven New or Noteworthy Birds from East-central California. *Ibi* vol. 20, pp. 86–90; Mar. 1918.

Six New Mammals from the Mohave Desert and Inyo Regions California. Univ. Calif. Publ. Zoology, vol. 17, pp. 423–30; A 1918.

Status of the White-rumped Petrels of the California Coast. Cond vol. 20, p. 46; Jan. 1918.

Subspecies of the Mountain Chicadee. Univ. Calif. Publ. Zoology, v 17, pp. 505–15; May 1918.

Gurley, J. E., Instructor in Dental Chemistry.

Discussion of Dr. Novitzky's Paper. Calif. State Dental Assoc. Jou vol. 2, no. 12, pp. 288–90; Dec. 1917.

Editorials. *Ibid.*, vol. 2, no. 7–vol. 3, no. 6; July 1917–June 1918.

Hackett, C. W., Assistant Editor of Historical Publications.

Delimitation of Political Jurisdictions in Spanish North America 1535. Hispanic American Historical Rev., vol. 1, pp. 40–69; F 1918.

Hall, H. M., Associate Professor of Economic Botany and Assist Botanist in the Agricultural Experiment Station.

Artemisias in the Rocky Mountains and Pacific States. U. S. Pub Health Service. Public Health Reports, vol. 32, pp. 1142–45; J 1917.

Emergency Supply of Rubber [with T. H. Goodspeed]. Science, n vol. 47, pp. 452–54; May 1918.

Gaertnerias. U. S. Public Health Service. Public Health Reports, v 32, pp. 1146–48; July 1917.

Walnut Pollen as a Cause of Hay Fever. Science, n.s., vol. 47, 516–17; May 1918.

Hall, I. C., Assistant Professor of Bacteriology.

Abstract: Cumming. *Resumé of the Typhus Situation in Californ* Abstracts of Bacteriology, vol. 1, no. 5, p. 436; Oct. 1917.

Abstract: Hirschmann and Ward. *Pruritus ani. Ibid.*, vol. 1, no. p. 270; June 1917.

Abstract: Smith. *Chronic Intestinal Toxemias. Ibid.*, vol. 1, no. 3 253; June 1917.

Automatic Water Level for Arnold Sterilizers. Jour. of Bacteriology, vol. 3, no. 1, pp. 7–8; Jan. 1918.

Laboratory Manual in General Bacteriology. Univ. Calif. Syllabus Ser., no. 91, 67 pp.; Jan. 1918.

Note on the Aerobic Culture of the Anaerobes at Higher Temperatures. Science, n.s., vol. 46, p. 570; Dec. 1918.

Stability of Emulsions in the Constricted Tube and Marble Device for Anaerobiosis. Jour. of Physical Chemistry, vol. 21, no. 8, pp. 609–22; Dec. 1917.

RDING, S. T., Associate Professor of Irrigation.

Operation and Maintenance of Irrigation Systems. N. Y., McGraw, 1917. 271 pp.

RRISON, M. E., Lecturer in Law.

Adoption of the Negotiable Instruments Law in California. Calif. Law Rev., vol. 6, pp. 23–36; Nov. 1917.

RT, G. H., Associate Professor of Veterinary Science.

Milk Inspector's Part in the Conservation of Dairy Products. Pacific Dairy Rev., vol. 21, no. 42, pp. 12–16; Nov. 1, 1917.

RT, W. M., Associate Professor of English Philology.

Hamlet. (The Arden Shakespeare.) Introduction, Notes, and Glossary revised. N. Y., Heath, 1917.

Note: Hustvedt. *Ballad Criticism in Scandinavia and Great Britain during the Eighteenth Century.* Nation, vol. 106, p. 242; Feb. 28, 1918.

Kipling the Story-Writer. Berkeley, Univ. Calif. Press, 1918. 225 pp.

ARVEY, R. W., Instructor in Neurology.

The Colloidal Gold (Lange) Test in Diagnosis. Calif. State Jour. of Medicine, vol. 16, pp. 170–82; Apr. 1918.

AYES, F. M., Assistant Professor of Veterinary Science.

Infectious Abortion in Cows. Univ. Calif. Agric. Exp. Sta. Circ. no. 183, 4 pp.; Nov. 1917.

AYS, W. C., Associate Professor of Architecture.

The Art of the Forge. Architect, vol. 15, pp. 148–54; Mar. 1918: pp. 216–23; Apr. 1918.

Critique: A Competition for a Small House and Garage. *Ibid.*, vol. 14, pp. 13–16; July 1917.

Current Notes and Comments. *Ibid.*, vol. 15, p. 56; Jan. 1918.

Editorial: Medals for Architects and Owners of Meritorious Buildings. *Ibid.*, vol. 15, p. 24; Feb. 1918.

Editorial: Qualifications of Architectural Jurors. *Ibid.*, vol. 15, p. 54; Jan. 1918.

Notes on the First Presbyterian Church Building of Oakland, Ca Reprinted from Univ. Calif. Jour. of Technology. Architectur Forum, vol. 26, p. 188; June 1917.

One Story and Open Air School Houses in California. *Ibid.*, vol. 2 pp. 3–12; July 1917: pp. 57–65; Sept. 1917.

Same. Reprinted in part. Interlocker, pp. 11–13; Sept. 1917.

HENDRICKSON, A. H., Assistant Professor of Pomology.

The Common Honey Bee as an Agent in Prune Pollination. Secon report. Univ. Calif. Agric. Exp. Sta. Bull. no. 291, pp. 215–3 Jan. 1918.

Importance of Bees in Prune Pollination. Grower's Voice; Oct. 191

What Size Nursery Trees? Calif. State Comm. of Horticultur Monthly Bull., vol. 7, no. 4; Apr. 1918.

HENDRY, G. W., Assistant Professor of Agronomy.

Bean Culture in California. Univ. Calif. Agric. Exp. Sta. Bull. n 294, pp. 287–340; Apr. 1918.

Bean Varieties and Their Adaptations to California. Pacific Rur Press, vol. 95, pp. 293–310; Mar. 1918.

Fitting of Bean Land. Calif. Cultivator, vol. 50, pp. 323–28; Mar. 191

Planting Field Beans in California. Pacific Rural Press, vol. 9 pp. 492–93; Apr. 1918.

HERSAM, E. A., Associate Professor of Metallurgy.

Outlook for Iron and Steel on the Pacific Coast. Mining and Scientifi Press, vol. 115, pp. 117–22; July 28, 1917.

Possible Treatment of Manganese Ores in California. Univ. Cali Publ. Engineering, vol. 2, pp. 1–56; Mar. 1918.

HERTEL, J. P., Assistant in Agricultural Extension, Assistant Farm Adviso

California's Champion Jersey. Jersey Bull., vol. 37, p. 676; May 1 1918.

Pretty Girls Milk in California. *Ibid.*, vol. 37, pp. 77; Jan. 16, 191

HIBBARD, P. L., Assistant Professor of Agricultural Chemistry.

Commercial Fertilizers. Univ. Calif. Agric. Exp. Sta. Bull. no. 28 pp. 115–66; Sept. 1917.

Potash from Tule. *Ibid.*, no. 288, pp. 185–92; Nov. 1917.

HILL, S. A., Clinical Professor of Applied Homeopathic Therapeutics.

Editorials. Pacific Coast Jour. of Homeopathy, vol. 28–29; 1917–191

Homeopathy at the University of California. Amer. Institute of Home opathy. Jour., vol. 10, pp. 1071–73; Mar. 1918.

HINMAN, F., Instructor in Urology.

Early Diagnosis of Renal Tumor with the Report of Five Cases and th Demonstration of Several Pyelograms Illustrative of the Difficulty Surgery, Gynecology and Obstetrics, vol. 24, pp. 669–80; June 191

Management of Surgical Risk: A Review of One Hundred Kidney and Prostate Operations, and Fifty Cases of Enlarged Postate not Operated Upon. Calif. State Jour. of Medicine, vol. 16, p. 211; Apr. 1918.

Modification of Ultzmann's Syringe for Posterior Urethral Instillations. Amer. Medical Assoc. Jour., vol., 70, p. 1297; May 4, 1918.

Urological Diagnosis in General Practice. Calif. State Jour. of Medicine, vol. 15, pp. 392–402; Oct. 1917.

AGLAND, D. R., Assistant Professor of Agricultural Chemistry.

Effect of Hydrogen and Hydroxyl Ion Concentration on the Growth of Barley Seedlings. Soil Science, vol. 3, pp. 547–60; June 1917.

Freezing Point Method as an Index of Variations in the Soil Solution Due to Season and Crop Growth. Jour. of Agric. Research, vol. 12, pp. 369–95; Feb. 11, 1918.

Relation of Carbon Dioxide to Soil Reaction [with L. T. Sharp]. *Ibid.*, vol. 12, pp. 139–48; Jan. 21, 1918.

DGSON, R. W., Instructor in Citriculture.

Account of the Mode of Foliar Abscission in Citrus. Univ. Calif. Publ. Botany, vol, 6, pp. 417–28; Feb. 1918.

An Avocado Monstrosity. Jour. of Heredity, vol. 8, pp. 557–58; Oct. 1918.

Black Smut of Figs. Calif. State Comm. of Horticulture. Monthly Bull., vol. 7, pp. 188–89; Apr. 1918.

Citrus Blast. Florida State Plant Board. Quarterly Bull., vol. 2, pp. 123–30; Jan. 1918.

Hilgard Hall. Univ. Calif. College of Agric., 12 pp.; Oct. 13, 1917.

Interesting Test Shows How Different Citrus Woods Grow. Los Angeles Sunday Times, Farm and Tractor Section, p. 5; June 23, 1918.

June Drop of Washington Navel Oranges: A Progress Report [with J. E. Coit]. Univ. Calif. Agric. Exp. Sta. Bull. no. 290, pp. 203–12; Jan. 1918.

Los Angeles County Farm Bureau Monthly, vol. 1, nos. 1–5; Feb.–June 1918.

More about June Drop. Calif. Cultivator, vol. 50, p. 496; Apr. 20, 1918.

More June Drop Discussion. *Ibid.*, vol. 50, p. 260; Mar. 2, 1918.

Orchard Intercropping. Calif. Citrograph, vol. 3; Nov. 1917.

Rational System Needed in the Pruning of Lemon Trees. Los Angeles Sunday Times, Farm and Tractor Section, p. 5; June 9, 1918.

Some Abnormal Water Relations in Citrus Trees of the Arid Southwest and Their Possible Significance. Univ. Calif. Publ. Agric. Sciences, vol. 3, pp. 37–54; Sept. 1917.

Same. Calif. Citrograph, vol. 3, p. 51; Feb. 1918.

Some Pointers on June Drop. Calif. Cultivator, vol. 50, p. 689; June 1918.

Timely Hints on the Care of the Citrus Grove in Summer. Los Angele Sunday Times, Farm and Tractor Section, p. 4, June 30, 1918.

Winter Injury to Fruit Trees Common This Year. Calif. Cultivato vol. 50, p. 771; June 29, 1918.

HOLMES, S. J., Professor of Zoology.

Continuous Stimulation versus Transitional Shock in Phototactic R sponse. Psychobiology, vol. 1, pp. 65–69; Sept. 1917.

Inheritance of White Forelock [with R. O. Schofield]. Jour. of He redity, vol. 8, pp. 359–60; Aug. 1917.

HORNE, W. T., Assistant Professor of Plant Pathology.

Advice on Rot Pest. San Jose Mercury Herald, Mar. 1918.

Apple Troubles in Santa Clara County. *Ibid.*, Mar. 1918.

Apricot Brown Rot Is Appearing in Valley. *Ibid.*, Mar. 1918.

Brown Rot of Apricots; Its Causes and What We Can Do to Preven It. Sunsweet Standard, vol. 1, no. 10, p. 8; Mar. 1918.

Control of Pear Scab. San Jose Mercury Herald, Mar. 1918.

French Warfare against Oak-Root Fungus. Pacific Rural Press, vo 95, p. 72; Jan. 1918.

Life History Studies in Sclerotinia [with F. J. Seaver]. Torrey Botan ical Club. Memoirs, vol. 17, pp. 202–06; June 1918.

Prepare to Spray for Brown Rot. San Jose Mercury Herald, Feb. 191

HOWARD, W. L., Associate Professor of Pomology.

Adaptability of Varieties. Rural World, Feb. 2, 1918.

Experiments in Horticultural Teaching. Amer. Soc. for Horticultura Science. Proceed., 1917, vol. 14, pp. 128–30; 1918.

The Home Fruit Orchard. Rural World, Jan. 26, 1918.

Intercrops for Orchards. *Ibid.*, May 4, 1918.

Planning an Experimental Project. Amer. Soc. for Horticultura Science. Proceed., 1917, vol. 14, pp. 156–60; 1918.

Relative Merits of Different Root Stocks. Calif. State Comm. of Horti culture. Monthly Bull., vol. 7, pp. 20–22; Jan.–Feb. 1918.

Root Stocks for Deciduous Fruit Trees. Calif. Assoc. of Nurserymen Transactions and Proceed., vol. 7; Oct. 1917.

Root Stocks for Deciduous Trees. Pacific Rural Press, vol. 94; No 10, 1917.

Same. Rural World, Nov. 17, 1917.

Rural Life Advance. *Ibid.*, Jan. 19, 1918.

Why Pear Trees Are Double Worked. Pacific Rural Press, vol. 95 Mar. 23, 1918.

IOWERTH, I. W., Professor of Education and Director of University Extension.

The Educational Process. School and Society, vol. 6, pp. 391–95; Oct. 6, 1917.

Natural Selection and the Survival of the Fittest. Scientific Monthly, vol. 5, pp. 253–57; Sept. 1917.

Review: Veblen. *An Inquiry into the Nature of Peace and the Terms of Its Perpetuation.* Amer. Jour. of Sociology, vol. 23, pp. 408–12; Nov. 1917.

Symposium: What May Sociologists Do toward Solving the Problems of the Present War Situation? Study the Problems Caused by the War. *Ibid.*, vol. 23, pp. 18–20; July 1917.

HUNT, T. F., Professor of Agriculture, Director of the Agricultural Experiment Station, Dean of the College of Agriculture.

Canada at War. Univ. Calif. Chronicle, vol. 20, pp. 149–75; Apr. 1918.

Carrying Hilgard's Work Forward. *Ibid.*, vol. 20, pp. 234–36; Apr. 1918.

How to Make Food Both Abundant and Cheap. Country Gentleman, June 29, 1918.

The 1918 Grain Crop. Univ. Calif. Agric. Exp. Sta. Circ. no. 169; Sept. 1917.

Observations on the Recent Agricultural Inquiry in California. Univ. Calif. Agric. Exp. Sta. Report, pp. 50–71; Sept. 1917.

Utilizing the Sorghums. Univ. Calif. Agric. Exp. Sta. Circ. no. 187; Dec. 1917.

What Crops? Calif. State Comm. of Horticulture. Monthly Bull., vol. 6, no. 9, pp. 353–56; Sept. 1917.

HURWITZ, S. H., Assistant Clinical Professor of Medicine.

Etiology and Treatment of Hemorrhagic Diseases. Amer. Jour. of the Medical Sciences, vol. 154, p. 689; 1917.

Studies on the Blood Proteins: III. Albumin-Globulin Ratio in Antitoxic Immunity [with K. F. Meyer and L. Taussig]. Jour. of Infectious Diseases, vol. 22, pp. 1–27; Jan. 1918.

Value of Renal Functional Studies in the Prognosis and Treatment of Nephritis. Calif. State Jour. of Medicine, vol. 16, p. 287; 1918.

Value of Roentgen Rays and Benzene in the Treatment of Polycythemia vera. Amer. Medical Assoc. Jour., vol. 70, p. 1143; 1918.

HYDE, C. G., Professor of Sanitary Engineering.

Discussion on How the Activated Sludge Process of Sewage Disposal Is Working in Pasadena. Pacific Municipalities, vol. 31, no. 11, p. 605; Nov. 1917.

Present Status and Recent Developments in Water Purification in the United States. *Ibid.*, vol. 31, no. 11, pp. 616–25; Nov. 1917.

Irwin, F., Instructor in Mathematics.

Problems Proposed for Solution. Amer. Mathematical Monthly, vo 24, p. 328; Sept. 1917: vol. 25, p. 119; Mar. 1918: pp. 170–71; Ap 1918.

Solution d'un problème. Intermédiaire des mathématiciens, vol. 2 pp. 136–37; Nov.–Dec. 1917.

Some Properties of Polynominal Curves [with H. N. Wright]. Annal of Mathematics, vol. 19, pp. 152–58; Dec. 1917.

Jaén, R., Associate Professor of Spanish.

El camino de Don Quijote, por A. F. Jaccaci. Traducción e ilustracione de Ramón Jaén. Madrid, La Lectura. 204 pp.

Guía espiritual de España: La Mancha. La Argentina en España, p 64–66; Aug. 1917.

Guía espiritual de España: Toledo. Hispania, vol. 1, pp. 89–96; Ma 1918.

Spanish Fiction in America. Nation, vol. 106, p. 261; Mar. 1918.

Las transformaciones del derecho público, por Leon Duguit. Traducció y estudio preliminar por A. Posada y Ramón Jaén. Madrid, F. Beltrán, 1917. 250 pp.

Zuloaga. Categorías españolas. Modern Language Bull., vol. 4, p 1–7; Mar. 1918.

Jaffa, M. E., Professor of Nutrition.

Alcoholic Beverages in Relation to the National Food Problem. Calif State Board of Health. Monthly Bull., vol. 13, no. 1, p. 8; Jul 1917.

Composition of California Varieties of Beans [with F. W. Albro] Univ. Calif. Agric. Exp. Sta. Bull. no. 294, pp. 341–43; Apr. 191

Cooking the Tepary Bean. Univ. Calif, Agric. Exp. Sta. Unnumbere leaflet, 4 pp.; Oct. 1917.

Food Standards. Univ. Calif. Agric. Exp. Sta. Unnumbered leaflet 4 pp.; Aug. 1917.

Food Value of Prunes. Pacific Rural Press, vol. 95, p. 628; May 11 1918.

Living Expenses. Univ. Calif. Agric. Exp. Sta. Unnumbered leaflet 3 pp.; Nov. 1917.

Studies on the Composition and Nutritive Value of Some Sub-tropica Fruits: Avocado, Guava, Sapotes and Feijoa. Calif. Avocado Assoc. Annual Report, 1917, pp. 85–91; Apr. 30, 1918.

Suggestions Sent to the State Institutions of California for Food Con servation in Accordance with the Proclamation of the United State Food Administration. Calif. State Board of Health. Monthl Bull., vol. 13, no. 9, p. 417; Mar. 1918.

effers, H. M., Assistant in Practical Astronomy, Instructor in the School of Military Aeronautics.

Elements and Ephemeris of Wolf's Object, 1918 DB. Univ. Calif. Lick Observatory Bull., vol. 19, no. 309, pp. 147–50; Apr. 24, 1918.

Ephemeris of Comet *b* 1916 (Wolf). Popular Astronomy, vol. 26, no. 3, pp. 200–01; Mar. 1918.

Note on Comet *b* 1916 (Wolf). Astron. Soc. of the Pacific. Publ., vol. 30, p. 170; Apr. 1918.

Note on Eclipse of June 8, 1918 [with C. S. Mundt]. *Ibid.*, vol. 30, p. 171; Apr. 1918.

epson, W. L., Associate Professor of Dendrology.

The Jepsons of the Border States. N. W. Jepson. History and Genealogy of the Descendants of John Jepson of England and Massachusetts, pp. 35–37, 59–63, 83–84; 1918.

Toxonomic Notes on Californian Plants. Madroño, vol. 1, p.p 61–62; 1917.

The White Mountains of California. Sierra Club Bull., vol. 8, pp. 282–86; 1918.

Jungerman, A. A., Assistant in Agricultural Extension.

Stanislaus County Farm Bureau Monthly, Dec. 15, 1917– June 15, 1918. Issued monthly.

Kaun, A. S., Assistant in Russian.

Bracelet of Garnets. Nation, vol. 105, pp. 374–75; Oct. 1917.

Fall of the Romanovs. *Ibid.*, vol. 106, p. 718; June 1918.

Journal of an Author. *Ibid.*, vol. 106, p. 485; Apr. 1918.

Leonid Andreyev. *Ibid.*, vol. 105, pp. 393–95; Oct. 1917.

Russia as I Know It. *Ibid.*, vol. 106, p. 628; May 1918.

Russian Court Memoirs. *Ibid.*, vol. 106, p. 718; June 1918.

A Year in Russia. *Ibid.*, vol. 106, p. 766; June 1918.

Kelley, W. P., Professor of Agricultural Chemistry.

Action of Precipitated Magnesium Carbonate on Soils. Amer. Soc. of Agronomy. Jour., vol. 9, pp. 285–97; July 1917.

Effect of Nitrifying Bacteria on the Solubility of Tricalcium Phosphate. Jour. of Agric. Research, vol. 12, pp. 671–83; Mar. 1918.

Kemp, W. W., Professor of School Administration.

New Function of the High School in the Training of Teachers. Calif. High School Teachers' Assoc. Proceed., Sierra Educational News, vol. 13, pp. 105–13; July–Aug. 1917.

Kleeberger, F. L., Director of Men's Gymnasium and Associate Professor of Physical Education.

Athletics and the War Game. School and Society, vol. 7, pp. 541–45; May 1918.

Same. Mind and Body, vol. 25, pp. 162–67; June 1918.

Same. San Francisco Examiner, Jan. 27, 1918.

Physical Education. Amer. Turner, vol. 5, pp. 1428–38; Dec. 1917.
Same. Berkeley Scouting, pp. 5–8; May 1918.
Physical Efficiency Tests as a Practical Method of Popularizing Physical Education at the University of California. Amer. Physica Education Rev., vol. 22, pp. 551–55; Dec. 1917.
Same. Mind and Body, vol. 24, pp. 361–71; Dec. 1917.
The Soldier on Foot. Univ. Calif. Military Bureau. Bull. no. 2; Feb 1918.
War Sports, Embracing Grenade Throwing, Boxing and Athletic Drills Arranged in Accord with Military Procedure [with E. H. Wight] Amer. Physical Education Rev., vol. 23, pp. 263–78; May 1918 pp. 383–99; June 1918.

Krunich, M., Assistant in Serbo-Croatian.
The Graveyard by the Morava. Atlantic Monthly, vol. 119, pp. 845–55 June 1917.
The Place of the Skull. *Ibid.*, vol. 120, pp. 51–60; July 1917.
Serbia Crucified. Boston, Houghton, 1918. 305 pp.

Kuno, Y. S., Instructor in Japanese.
American-Japanese Problems. New World, vol. 23; Jan. 1, 1918.
Comparison of American and Japanese Students. Japanese Student vol. 2, p. 149; Apr. 1918.
Japan's Reaction upon Oriental and Occidental Civilization. Berkele Lyceum, vol. 8, p. 24; Nov. 1917.

Lange, A. F., Professor of the Theory and Practice of Education an Director of the School of Education.
The Junior College as an Integral Part of the Public School System School Rev., vol. 25, pp. 465–79; Sept. 1917.
The Junior College—What Manner of Child Shall This Be? School an Society, vol. 7, pp. 211–16; Feb. 23, 1918.
New Wine in New Bottles. Manual Training Magazine, vol. 19, pp 9–12; Sept. 1917.
Our Preparedness Program. School and Society, vol. 6, pp. 361–66 Sept. 29, 1917.
The Place of Science in the Training of Boys and Girls for Persona Efficiency and Better Citizenship. *Ibid.*, vol. 7; May 18, 1918.
Reorganization of the School System: The County Unit. Sierra Educational News, vol. 14, pp. 337–40; June 1918.

Langstroth, L., Instructor in Medicine.
The Incidence of Chronic Focal Infection in Chronic Diseases. Ame Jour. of the Medical Sciences, vol. 155, pp. 232–39; Feb. 1918.

Lea, E. J., Associate Professor of Nutrition.
Monthly Reports of the Bureau of Foods and Drugs. Calif. Stat Board of Health. Monthly Bull., July 1917–June 1918.

Leebrick, K. C., Assistant Professor of History.

Student Life, 1909 and 1918. Calif. Alumni Fortnightly, vol. 11, pp. 57–59; Mar. 1918.

Legge, R. T., Professor of Hygiene and University Physician.

Health Insurance as Practiced at the University of California. Reprinted in Survey of Social Agencies of Alameda County. 1917.

Sanitation of Logging Camps. Calif. Forestry, vol. 1, no. 7; Nov. 1917.

Students' Health Insurance at the University of California. Southern Medical Jour., Feb. 1918.

Same. U. S. Bureau of Labor Statistics. Bull. no. 212, pp. 505–11; 1917.

Lewis, E. P., Professor of Physics.

Reviews: Millikan. *The Electron;* Crehore. *The Mystery of Matter and Energy.* Physical Rev., vol. 11, pp. 251–52; Mar. 1918.

Reviews: Shepardson. *Telephone Apparatus;* Perrin. *Atoms.* *Ibid.*, vol. 10, pp. 412–13; Oct. 1917.

Reviews: Soddy. *La chimie des élements radioactifs;* Barbillion. *Groupes electrogenes en régime troublé.* *Ibid.*, vol. 10, p. 589; Nov. 1917.

Linforth, I. M., Associate Professor of Greek.

Οι α Δαυατι΄σουτεσ. Classical Philology, vol. 13, pp. 23–33; Jan. 1918.

Review: Moore. *Religious Thought of the Greeks.* *Ibid.*, vol. 13, pp. 99–103; Jan. 1918.

Linn, L. P., Secretary, Department of Education.

Organization Powers Accorded City School Superintendents by General Laws. School and Society, vol. 7, pp. 601–06; May 25, 1918.

Lipman, C. B., Professor of Soil Chemistry and Bacteriology.

Copper and Zinc as Antagonistic Agents to the ''Alkali'' Salts in Soils [with W. F. Gericke]. Amer. Jour. of Botany, vol. 5, no. 4, pp. 151–70; Apr. 1918.

Death of Professor Robert Hills Loughridge. Univ. Calif. Chronicle, vol. 19, pp. 492–93; Oct. 1917.

Same. Soc. for the Promotion of Agric. Science. Proceed., 1917, vol. 38, pp. 123–24; 1918.

Does $CaCO_3$ or $CaSO_4$ Treatment Affect the Solubility of the Soil's Constituents? [with W. F. Gericke]. Univ. Calif. Publ. Agric. Sciences, vol. 3, no. 10, pp. 271–82; June 1918.

Fertilizing California Soils for the 1918 Crop. Univ. Calif. Agric. Exp. Sta. Circ. no. 170, 8 pp.; Sept. 1917.

New Method of Extracting the Soil Solution. Univ. Calif. Publ. Agric. Sciences, vol. 3, no. 7, pp. 131–34; Mar. 15, 1918.

Optimum Moisture Conditions for Young Lemon Trees on a Loam Soil [with L. W. Fowler]. *Ibid.*, vol. 3, no. 2, pp. 25–36; Sept. 29, 1917.

''Rawness'' of Subsoils. Science, n.s., vol. 46, pp. 280–90; Sept. 21, 1917.

Revolution in the Theories and Methods of Soil Chemistry. Soc. fo the Promotion of Agric. Science. Proceed., 1917, vol. 38, pp. 33–40 1918.

Significance of the Sulfur in Sulfate of Ammonia Applied to Certai Soils [with W. F. Gericke]. Soil Science, vol. 5, no. 1, pp. 81–86 Jan. 1918.

Some Little-known Facts about Soils and Their Significance to th San Joaquin Valley. Sun-Maid Herald, vol. 3, no. 7, p. 15; Feb 1918.

LISSER, H., Instructor in Medicine.

Note on the Use of Corpus luteum to Prevent the Painful Breasts o Menstruation. Endocrinology, vol. 2, pp. 12–16; Mar. 1918.

Syphilis of the Lung. Amer. Jour. of the Medical Sciences, vol. 155 pp. 356–81; Mar. 1918.

LOEWENBERG, J., Assistant Professor of Philosophy.

Bibliography of the Unpublished Writings of Josiah Royce. Philo sophical Rev., vol. 26, pp. 578–82; Sept. 1917.

Classic and Romantic Trends in Plato. Harvard Theological Rev., vol 10, pp. 215–36; July 1917.

Prophetic Songs of Swinburne. Univ. Calif. Chronicle, vol. 20, pp. 106-15; Jan. 1918.

LONG, J. A., Assistant Professor of Embryology.

Period of Synapsis in the Egg of the White Rat, *Mus Norwegicu albinus* [with B. H. Pratt]. Jour. of Morphology, vol. 29, pp. 441–61 Sept. 1917.

LOWIE, R. H., Associate Professor of Anthropology.

Culture and Ethnology. N. Y., D. C. McMurtrie, 1917. 189 pp.

Notes on the Social Organization and Customs of the Mandan, Hidatsa and Crow Indians. Amer. Museum of Natural History. Anthro pological Papers, vol. 21, pp. 1–99; Sept. 1917.

LUCAS, W. P., Professor of Pediatrics.

Work of the Children's Bureau, Department of Civil Affairs, America Red Cross, France. Amer. Jour. of the Medical Sciences, vol. 155 p. 269; Feb. 1918.

MACAULAY, F. R., Instructor in Economics.

Review: *Seventh Annual Report on Wholesale Prices in Canada.* Amer. Econ. Rev., vol. 8, pp. 187–90; Mar. 1918.

McGEE, J. M., Teaching Fellow in Chemistry.

The Imbibitional Swelling of Marine Algae. Plant World, vol. 21, pp. 13–16; Jan. 1918.

MacMinn, G. R., Instructor in English.

Adventure of the Training Camp. Unpopular Rev., vol. 9, pp. 286–304; Apr. 1918.

Picnickers in Academe. *Ibid.*, vol. 8, pp. 133–44; July 1917.

Review: Campbell and Rice. *Book of Narratives.* Sierra Educational News, vol. 14, p. 45; Jan. 1918.

Two Sonnets. Univ. Calif. Chronicle, vol. 20, p. 265; Apr. 1918.

Madson, B. A., Assistant Professor of Agronomy.

Sweet Sorghums for Forage. Univ. Calif. Agric. Exp. Sta. Bull. no. 293, 12 pp.; Apr. 1918.

Marquardt, J. C., Assistant in Dairy Husbandry.

Dairy Farming under War Conditions. Pacific Dairy Rev., vol. 22, pp. 1–2; Feb. 28, 1918.

Milk for Infants. *Ibid.*, vol. 22, p. 17; Feb. 14, 1918.

Raising Calves on Butter Milk. *Ibid.*, vol. 22, p. 13; May 30, 1918.

Martin, J. C., Instructor in Agricultural Chemistry.

Volumetric Determination of Sulfates in Water Extracts of Soils [with A. W. Christie]. Soil Science, vol. 4, no. 6, pp. 477–79; Dec. 1917.

Mead, E., Professor of Rural Institutions.

Enlisting the Farm to Win the War: What an Agricultural Engineer Thinks of Our Farming System. Outlook, vol. 118, pp. 534–35; Apr. 3, 1918.

Farming His Own. Sunset, vol. 39, pp. 26–27; Sept. 1917.

Government Aid and Direction in Land Settlement. Amer. Economic Rev., vol. 8, pp. 72–98; Mar. 1918.

How to Prepare Farm Homes for Our Returning Soldiers. Pacific Rural Press, p. 163; Feb. 9, 1918.

Progress Report on Production and Distribution of Milk. Univ. Calif. Agric. Exp. Sta. Circ. no. 175, 16 pp.; Oct. 1917.

State Aid and Direction in Land Settlement. Address. Washington State Irrigation Assoc. Annual Report, 1918.

Merrill, G. E., Instructor in Agricultural Extension, Farm Advisor.

Boarder Cows Must Go. Sonoma County Farm Bureau Monthly, p. 1; Mar. 1918.

Farm Bureau Promotes Pork Production. *Ibid.*, pp. 1–4; Apr. 1918.

Sonoma Chickens Must Lay More Eggs. *Ibid.*, pp. 1–4; May 1918.

Merrill, W. A., Professor of the Latin Language and Literature.

Elements of Law Latin. Syllabus. Univ. Calif. Syllabus Ser., no. 88, 74 pp.; Aug. 1917.

Lucreti *De rerum natura*, libri sex; recognovit Guilelmus Augustus Merrill. Univ. Calif. Publ. Classical Philology, vol. 4, 258 pp.; Nov. 1917.

Notes on Lucretius. *Ibid.*, vol. 3, pp. 265–316; June 1918.

On a Problem of the Lex Aquilia. Calif. Law Rev., vol. 6, pp. 295–96; May 1918.

On Lucretius IV. 1125. Classical Philology, vol. 12, p. 306; July 1917.

Parallelisms in Lucretius and Ennius. Univ. Calif. Publ. Classical Philology, vol. 3, pp. 249–64; Mar. 1918.

Parallelisms in Lucretius and Virgil. *Ibid.*, vol. 3, pp. 135–247; Mar. 1918.

Review: T. Lucretius Carus. *Of the Nature of Things,* translated by Leonard. Classical Philology, vol. 13, pp. 105–06; Jan. 1918.

Review: Sherman. *Roman Law in the Modern World.* Calif. Law Rev., vol. 6, pp. 240–41; Mar. 1918.

Some Etymologies of Cassiodorus. Amer. Philological Assoc. Transactions, vol. 47, p. xl; July 1917.

METCALF, W., Assistant Professor of Forestry.

County Organization for Rural Fire Control. Univ. Calif. Agric. Exp. Sta. Circ. no. 202, 23 pp.; June 1918.

Fire Protection for Grain Fields. Univ. Calif. Agric. Exp. Sta. Bull. no. 295, 18 pp.; May 1918.

New Home of Forestry at the University of California. Amer. Forestry, vol. 24, pp. 73–76; Mar. 1918.

The University of California Forestry Summer Camp. Calif. Forestry, vol. 1, no. 5, pp. 33–34; Sept. 1917.

MEYER, K. F., Associate Professor of Tropical Medicine.

Observations on the Presence of Bacillus abortus bovinus in Certified Milk [with E. C. Fleischner]. Amer. Jour. of Diseases of Children, vol. 14, pp. 157–73; Sept. 1917.

Present Status of Dental Bacteriology. National Dental Assoc. Jour., vol. 4, pp. 966–96; Sept. 1917.

Studies on Blood Proteins. III. Albumin-Globulin Ratio in Antitoxic Immunity [with S. H. Hurwitz and L. Taussig]. Jour. of Infectious Diseases, vol. 22, pp. 1–27; Jan. 1918.

MEYERS, A. E., Assistant in Pediatrics.

Some Problems in Starch Digestion in Infancy and Childhood [with E. C. Fleischner]. Archives of Pediatrics, vol. 35, pp. 129–41; Mar. 1918.

MILLER, M. R., Assistant Chemist in Insecticide Control.

Poisoned Grain Baits for Rodents. Calif. State Comm. of Horticulture. Monthly Bull., vol. 7, pp. 207–10; Apr. 1918.

MINOR, R. S., Associate Professor of Physics.

An Optical Trough for High School and College Demonstrations. Physical Rev., vol. 9, p. 577; June 1917.

ORGAN, Mrs. A. F., Assistant Professor of Household Science.

The Children's Diet in War Time. Calif. State Board of Health. Monthly Bull., vol. 13, pp. 522–26; June 1918.

New Ideal of Public Service in the Nursing Profession. Pacific Coast Jour. of Nursing, vol. 14, pp. 15–20; Jan. 1918.

ORLEY, S. G., Assistant Professor of Spanish.

Difference between High School and Junior College Teaching of Modern Languages. Sierra Educational News, vol. 13, pp. 89–90; July–Aug. 1917.

Fondo en—A Rare Spanish Idiom. Modern Language Notes, vol. 32, pp. 501–03; Dec. 1917.

In Praise of Death. A Sonnet Sequence translated from the Portuguese of Anthero de Quental. Univ. Calif. Chronicle, vol. 19, pp. 389–91; 1917.

ORRIS, W. A., Assistant Professor of English History.

The Office of Sheriff in the Early Norman Period. English Historical Rev., vol. 33, pp. 145–75; Apr. 1918.

Teaching of History in the Junior College. Sierra Educational News, vol. 13, pp. 88–89; July–Aug. 1917.

ORROW, H., Clinical Professor of Dermatology.

Treatment of Impetigo contagiosa. Amer. Medical Assoc. Jour., vol. 69, pp. 176–77; July 21, 1917.

Two Cases of the Bowen Type of Epithelioma. Jour. of Cutaneous Diseases, vol. 36, pp. 1–10; Jan. 1918.

ULFORD, W., Professor of Forestry.

Forestry Notes. Sierra Club Bull., vol. 10, pp. 373–78; pl. 217; Jan. 1918.

University of California. Yale Forest School News, vol. 6, p. 4; Jan. 1918.

UNDT, C. S., Teaching Fellow in Astronomy.

Note Concerning the Total Solar Eclipse of June 8, 1918 [with H. M. Jeffers]. Astron. Soc. of the Pacific. Publ., vol. 30, p. 171; Apr. 1918.

On the Orbit of (718) *Erida*. Univ. Calif. Lick Observatory Bull., vol. 9, p. 115; Dec. 1917.

ALDER, F. F., Assistant Director of University Extension.

New Field for Ambitious Teachers. Jour. of Education, vol. 87, pp. 399–400, 438–39, 459–60; Apr. 11–25, 1918.

A Notable Community Service. *Ibid.*, vol. 86, pp. 487–89; Nov. 15, 1917.

Opportunity and Demand for University Extension. School and Society, vol. 6, pp. 344–49; Sept. 22, 1917.

NASH, J. B., Lecturer in Recreation.

War Citizenship Lessons for Elementary Schools: Physical Fitness fo Citizenship. Calif. State Board of Education. Bull. no. 25, pp. 31-43; May 1918.

NELSON, J. W., Assistant Professor of Soil Technology.

Detailed Soil Survey of Ventura County, California. U. S. Dept. o Agric. Bureau of Soils, 1918.

Soil Survey of the Upper San Joaquin Valley, California. Reconnaissance. *Ibid.*, 1918.

NORTON, J. H., Instructor in Chemistry.

Chemistry Manual for Agricultural Students. Davis, Cal., Davis Enterprise, 1918. 70 pp.

NOYES, G. R., Associate Professor of Slavic Languages.

The Dismissal of the Grecian Envoys, by Jan Kochanowski. Translate from the Polish by George Rapall Noyes, and done into Englis Verse by Ruth Earl Merrill. Univ. Calif. Chronicle, vol. 20, pp. 36-55; Jan. 1918.

Plays by Alexander Ostrovsky: A Protégé of the Mistress, Poverty I No Crime, Sin and Sorrow Are Common to All, It's a Famil Affair—We'll Settle It Ourselves. A Translation from the Russian edited by George Rapall Noyes. N. Y., Scribner, 1917. 305 pp.

Review: Gorky. *In the World.* Nation, vol. 106, p. 511; Apr. 25, 191

Review: *Tales by Polish Authors,* translated by Else C. M. Benecke *More Tales by Polish Authors,* translated by Else C. M. Benecke an Marie Busch. *Ibid.*, vol. 105, pp. 93–94; July 26, 1917.

Review: Tolstoy's Diaries. *Ibid.*, vol. 106, pp. 596–97; May 18, 1918.

Tolstoy. (In series *Master Spirits of Literature,* edited by Georg Rapall Noyes and Walter Morris Hart.) N. Y., Duffield, 191 395 pp.

NUTTING, H. C., Assistant Professor of Latin.

Caesar's Use of Past Tenses in Cum-Clauses. Univ. Calif. Publ. Classical Philology, vol. 5, pp. 1–53; Feb. 1918.

Carmen horae vespertiniae (Words and Music). Univ. Calif. Lati Dept. Circ., Mar. 1918.

Classics and the Reformer. Educational Rev., vol. 54, pp. 293–306 Oct. 1917.

Classics in Translation. Classical Jour., vol. 13, pp. 385–89; Mar. 191

Deus praesidium nostrum. Classical Weekly, vol. 11, p. 112; Jan. 191

Eagles Twain. Christian Advocate, vol. 93, p. 326; Mar. 1918.

Experimental Test of Educational Values. Education, vol. 38, pp. 460-66; Feb. 1918.

Fourth-Year Latin. Classical Jour., vol. 13, pp. 45–54; Oct. 1917.

Latin and the A.B. Degree. School and Society, vol. 7, pp. 121–26; Feb. 1918.

Lux libertatis. Classical Weekly, vol. 11, p. 16; Oct. 1918.

Military Parallels. *Ibid.*, vol. 11, p. 87; Jan. 1918: p. 224; May 1918.

Mr. Dickens' Modern School. Jour. of Education, vol. 87, p. 152; Feb. 1918.

On the Classics in Translation. School and Society, vol. 5, pp. 707–09; June 1917.

Perils of ''Bookish'' Education. Jour. of Education, vol. 86, pp. 31–32; July 1917.

Review: Mendell. *Latin Sentence Connection.* Classical Weekly, vol. 11, pp. 37–39; Oct. 1917.

Two Phases of Mental Discipline. School and Society, vol. 6, pp. 261–63; Sept. 1917.

Via nova—The Direct Method. Classical Jour., vol. 13, pp. 200–05; Dec. 1917.

'Neill, E., Professor of Inorganic Chemistry, Director of the Chemical Laboratory, and Acting Dean of the College of Chemistry.

Dedication of Gilman Hall, University of California. Jour. of Industrial and Engineering Chemistry, vol. 10, no. 5, pp. 391–94; May 1, 1918.

Work of the Department of Chemistry in War Time. Univ. Calif. Chronicle, vol. 20, no. 1, pp. 82–92; Jan. 1918.

ackard, W. E., Assistant Professor of Agricultural Extension.

Cotton Culture. Calif. State Comm. of Horticulture. Monthly Bull., vol. 7, no. 4; Apr. 1918.

Irrigation of Alfalfa in Imperial Valley. Univ. Calif. Agric. Exp. Sta. Bull. no. 284; Sept. 1917.

Money Power and Crop Production. Univ. Calif. Jour. of Agric., vol. 5, no. 1, p. 12; Oct. 1917.

addock, G. F., Assistant in Astronomy.

Nova Monocerotis. Astron. Soc. of the Pacific. Publ., vol. 30, pp. 189–90; June 1918.

Spectrum and Radial Velocity of the Spiral Nebula N.G.C. 4151 [with W. W. Campbell]. *Ibid.*, vol. 30, pp. 68–69; Feb. 1918.

aetow, L. J., Associate Professor of Medieval History.

Guide to the Study of Medieval History. Univ. Calif. Syllabus Ser., no. 90, xvi, 552 pp.; 1917.

aschall, C., Associate Professor of German.

Modern Language Study. Educational Rev., pp. 344–59; Nov. 1917.

Some Germanic Etymologies. Amer. Philological Assoc. Proceed., 1916, vol. 47, pp. xli–xlii; 1917.

Pernot, F. E., Assistant Professor of Electrical Engineering.

Electrical Phenomena in Parallel Conductors. Vol. I. Elements o Transmission. N. Y., Wiley, 1918. 332, xii pp.

Method for the Measurement of Self and Mutual Inductances. Uni Calif. Publ. Engineering, vol. 1, no. 12, pp. 293–96; Dec. 1917.

Petersen, P. T., Instructor in Veterinary Science.

Hog Cholera Prevention and the Serum Treatment. Univ. Calif. Agri Exp. Sta. Circ. no. 176, 15 pp.; Oct. 1917.

Philbrick, F. S., Professor of Law.

History of Germanic Private Law, by Rudolf Hubner. Translated b Francis S. Philbrick. Boston, Little, 1918. lix, 785 pp.

Rational Bases for Ultimate International Peace. Class Day Addres before the University of Nebraska, June 12, 1917. Mid-Wes Quarterly, vol. 5, no. 1, pp. 61–93; Oct. 1917.

Review: *Argentine Civil Code, together with the Constitution and La of Civil Registry,* translated by Frank L. Joannini. Illinois La Rev., vol. 13, no. 1, pp. 64–70; May 1918.

Review: Figarola-Caneda. *Bibliografia de Luz y Caballero.* Amer. Hi torical Rev., vol. 22, no. 4, pp. 913–14; July 1917.

Pope, S. T., Assistant Clinical Professor of Surgery.

The University Hospital Shoulder Splint. Annals of Surgery, vol. 6 p. 581; Nov. 1917.

Yahi Archery. Univ. Calif. Publ. Amer. Archaeology and Ethnolog vol. 13, no. 3, pp. 103–52; Mar. 1918.

Price, L. M., Instructor in German.

Karl Gutzkow and Bulwer-Lytton. Jour. of English and Germani Philology, vol. 16, pp. 397–415; July 1917.

Probert, F. H., Professor of Mining.

Mining—Yesterday, Today and Tomorrow. Grizzly Bear, vol. 22, p. 2 Mar. 1918.

Putnam, T. M., Associate Professor of Mathematics and Dean of th Lower Division.

Mathematical Forms of Certain Eroded Mountain Sides. Amer. Math matical Monthly, vol. 24, pp. 451–53; Dec. 1917.

Quayle, H. J., Professor of Entomology.

Cyanide Fumigation: Diffusion of Gas under Tent and Shape of Tre in Relation to Dosage. Jour. of Economic Entomology, vol. 1 pp. 350–58; June 1918.

Randall, M., Assistant Professor of Chemistry.

Equilibrium in the Reaction between Water and Sulfur at High Ten peratures. The Dissociation of Hydrogen Sulfide [with F. R. vo Bichowsky]. Jour. of the Amer. Chemical Soc., vol. 40, pp. 368–7 Feb. 1918.

Equilibrium in the Reaction between Water and Sulfur at the Boiling Point of Sulfur [with G. N. Lewis]. *Ibid.*, vol. 40, pp. 362–67; Feb. 1918.

Free Energy of Dilution of Sulfuric Acid. *Ibid.*, vol. 40, pp. 393–97; Feb. 1918.

Preliminary Study of Reversible Reactions of Sulfur Compounds [with G. N. Lewis and F. R. von Bichowsky]. *Ibid.*, vol. 40, pp. 356–62; Feb. 1918.

AYMOND, W. J., Associate Professor of Physics.

An Harmonic Synthesizer having Components of Incommensurable Period and Any Desired Decrement. Physical Rev., vol. 11, pp. 479–81; June 1918.

EED, H. S., Professor of Plant Physiology.

Comparative Results of Moderate and Severe Pruning. Calif. Citrograph, vol. 3, no. 2, p. 25; Dec. 1917.

Relation of the Variability of Yields of Fruit Trees to the Accuracy of Field Trials [with L. D. Batchelor]. Jour. of Agric. Research, vol. 12, no. 5, pp. 245–83; Feb. 1918.

EED, T. H., Associate Professor of Government.

Abstract of Budget Estimates for the Year 1917–1918. Pub. by the City of San Jose, Nov. 1917. 13 pp.

Annual Report of the City Manager of San Jose. Dec. 1917. 62 pp.

City Manager Government in San Jose a Success. Spectator, Oakland, vol. 9, no. 4, p. 1; Apr. 6, 1918.

Municipal Rule and Misrule. Bancroft, H. H. *In These Latter Days*, pp. 225–30; 1917.

Report as City Manager to League of California Municipalities. Pacific Municipalities, vol. 31, pp. 606–07; Nov. 1917.

Work of the California Conference on City Planning. Architect and Engineer, vol. 52, no. 3, pp. 84–85; June 1918.

CHARDSON, L. J., Associate Professor of Latin.

The Military Bureau of the University of California. Univ. Calif. Chronicle, vol. 20, pp. 100–05; Jan. 1918.

War Coöperation. Calif. Alumni Fortnightly, vol. 10, pp. 169–70; Sept. 8, 1917.

TTER, W. E., Professor of Zoology and Scientific Director of the Scripps Institution for Biological Research.

Ascidians of the Littoral Zone of Southern California [with R. A. Forsyth]. Univ. Calif. Publ. Zoology, vol. 16, pp. 439–512; Aug. 1917.

The Higher Usefulness of Science, and Other Essays. Boston, Badger, 1918. 146 pp.

Population and Territory. Soc. to Eliminate Economic Causes of War. Bull., vol. 2, no. 8, pp. 3–7; Mar. 1918.

Resources of the North Pacific Ocean: Their Extent, Utilization an Conservation. Scripps Institution. Bull., no. 5, pp. 3–20; Mar. 1 1918.

Science and an Organized Civilization. Scientific Monthly, vol. 5, p 135–45; Aug. 1918.

Roadhouse, C. L., Professor of Dairy Industry.

California Offers Wide Range for Dairying. Univ. Calif. Farm Agr cola, vol. 3, no. 7, p. 1; Nov. 16, 1917.

Factors of Importance in Producing Milk of Low Bacterial Coun Univ. Calif. Agric. Exp. Sta. Circ. no. 179, 11 pp.; Oct. 1917.

Our Live Stock Policy for the Future. Western Farmer, vol. 19, no. pp. 12–13; Apr. 1, 1918.

Robinson, L. N., Instructor in Electrical Engineering.

Phenomena Accompanying Transmission with Some Types of St Transformer Connections. Amer. Institute of Electrical Engineer Proceed., vol. 36, pp. 967–97; Dec. 1917.

Rogers, S. S., Associate Professor of Olericulture.

City Winter Gardening. Univ. Calif. Agric. Exp. Sta. Unnumbere leaflet, 3 pp.; 1917.

Growing the Fall or Second Crop of Potatoes in California. Uni Calif. Agric. Exp. Sta. Circ. no. 200, 4 pp.; May 1918.

Growing Vegetables under Contract. Univ. Calif. Agric. Exp. St Unnumbered leaflet, 2 pp.; 1917.

My War Garden—A Patriotic and Economic Duty. Univ. Calif. Agri Exp. Sta. Unnumbered leaflet, 3 pp.; Dec. 1917.

Onion Growing in California. Univ. Calif. Agric. Exp. Sta. Circ. n 199, 22 pp.; May 1918.

Spinach Growing in California. Univ. Calif. Agric. Exp. Sta. U numbered leaflet, 3 pp.; Feb. 1918.

Vegetable Planting and Harvesting Calendar for Central Californi Univ. Calif. Agric. Exp. Sta. Unnumbered leaflet, 3 pp.; Sept. 191

Ryder, A. W., Assistant Professor of Sanskrit.

Twenty-two Goblins. Translated from the Sanskrit by Arthur Ryder. London, Dent, 1917. viii, 220 pp.

Sawyer, W. A., Clinical Professor of Preventive Medicine and Hygiene.

California Program for the Prevention of Venereal Diseases. Soci Hygiene, vol. 4, pp. 25–37; Jan. 1918.

Correctable Defects and Tuberculosis in Drafted Men. Amer. Medic Assoc. Jour., vol. 70, p. 308; Feb. 2, 1918.

Schevill, R., Professor of Spanish.

First Spanish Reader. Boston, Ginn, 1917. 175 pp.

Obras completas de Cervantes, vol. 7–8 (*Comedias III–IV*). Madri B. Rodriguez, 1918. 2 vols.

ILLING, H. K., Professor of the German Language and Literature.

The Value of Translation (Conclusion). Modern Language Bull., vol. 3, no. 2, pp. 3–6; June 1917: no. 3, p. 17; Sept. 1917.

The Verb in Indirect Discourse and in Conditional Clauses. Syllabus for the Use of German Classes. Univ. Calif. Dept. of German, 4 pp.; Mar. 1918.

IMIDT, C. L. A., Research Assistant in Pathology.

Method for the Preparation of Taurin in Large Quantities [with T. Watson]. Jour. of Biological Chemistry, vol. 33, p. 499; 1918.

On the Elimination of Taurin Administered to Man [with E. von Adelung and T. Watson]. *Ibid.*, vol. 33, p. 501; 1918.

INEIDER, A., Professor of Pharmacognosy, Economic Pharmaceutical Botany, Histology and Bacteriology, and Instructor in Materia Medica.

Cultivation of Belladonna in California. Pacific Pharmacist, vol. 11; Nov. 1917–Mar. 1918.

Microbiology and Microanalysis of Foods. Report for the Office of the Surgeon General, U. S. War Department. May 20, 1918.

The Microscope in Detective Work. Report for the Office of Naval Intelligence, U. S. Navy Department. May 7, 1918.

A Toxigenic Saccharomycete of Herbivora. Univ. Calif. Graduate, 1918.

TCHELL, W. A., Professor of Botany.

Parasitism among the Red Algae. Amer. Philosophical Soc. Proceed., vol. 57, pp. 155–72; June 1918.

ERIN, H. H. P., Instructor in Entomology.

Dark Currant Fruit Fly (*Rhagoletis ribicola* Doane) in California. Calif. State Comm. of Horticulture. Monthly Bull., vol. 6, pp. 258–60; June 1917.

Fruit Flies of Economic Importance in California: Apple Maggot (*Rhagoletis pomonella* Walsh). *Ibid.*, vol. 7, pp. 430–32; June 1918.

Fruit Flies of Economic Importance in California: Currant Fruit Fly (*Epochra canadensis* Loew). *Ibid.*, vol. 7, pp. 201–06; Apr. 1918.

Life, History, Habits, Natural Enemies and Methods of Control of the Currant Fruit Fly (*Epochra canadensis* Loew). Maine Agric. Exp. Sta. Bull. no. 264, pp. 177–246; Sept. 1917.

Mediterranean Fruit-Fly (*Ceratitis capitata* Wied.) Breeds in Bananas. Jour. of Economic Entomology, vol. 10, pp. 318–21; June 1917.

A Native Food Plant of *Rhagoletis fausta* O. S. *Ibid.*, vol. 11, pp. 325–27; June 1918.

Notes on the Beet Leafhopper, *Eutettix tenella* Baker. *Ibid.*, vol. 11, pp. 308–12; June 1918.

Oils Tested to Trap Trypetidae and Ortalidae. Calif. State Comm. of Horticulture. Monthly Bull., vol. 7, pp. 419–23; June 1918.

Seymour, J. L., Teaching Fellow in English.

A Protégé of the Mistress. It's a Family Affair—We'll Settle It Ou selves, translated by J. L. Seymour. Plays by Alexander Ostrovsk edited by G. R. Noyes, p. 55 and p. 92; 1917.

Shattuck, C. H., Professor of Forestry.

Editorial: Waste of Forage through Lack of Grazing. Amer. Forestr vol. 23, pp. 748–49; Dec. 1917.

Grazing, an Incompletely Developed Phase of Conservation. Cali Forestry, vol. 1, p. 45; Oct. 1917.

Trees; What, Where, When and How to Plant. Univ. of Idaho Agri Exp. Sta. Bull. no. 105, 65 pp.

University Co-operation in Night Schools. A Paper Read before th Annual Meeting of the Pacific Logging Congress, Seattle, Oct. 1 1917. Timberman, vol. 19, no. 1, pp. 55–57; Nov. 1917.

Value of Grazing Management on the Caribou National Forest. Ame Forestry, vol. 23, pp. 536–38; Sept. 1917.

Shaw, C. F., Professor of Soil Technology.

Utilization of Idle Lands for Wheat. Univ. Calif. Jour. of Agri vol. 5, no. 1, pp. 11–12; Oct. 1917.

Same. Univ. Calif. Agric. Exp. Sta. Unnumbered leaflet, 4 pp.; No 1917.

Slate, F., Professor of Physics.

The Fundamental Equations of Dynamics. Berkeley, Univ. Cali Press, 1918. 225 pp.

Smith, A., Assistant Professor of Soil Technology.

Relation of the Mechanical Analysis to the Moisture Equivalent Soils. Soil Science, vol. 4, no. 6, pp. 471–77; Dec. 1917.

Sperry, P., Instructor in Mathematics.

Properties of a Certain Projectively Defined Two-Parameter Family Curves on a General Surface. Amer. Jour. of Mathematics, vol. 4 no. 2, pp. 213–24; Apr. 1918.

Stewart, G. R., Assistant Professor of Agricultural Chemistry.

Effect of Season and Crop Growth in Modifying the Soil Extract. Jou of Agric. Research, vol. 12, pp. 311–68; Feb. 11, 1918.

Stock, C., Research Assistant in Palaeontology.

The Pleistocene Fauna of Hawver Cave. Univ. Calif. Publ. Bull. of th Dept. of Geology, vol. 10, pp. 461–515; Apr. 1918.

Sumner, F. B., Biologist in the Scripps Institution for Biological Researc

Autotomy of the Tail in Rodents [with H. H. Collins]. Biologic Bull., vol. 34, pp. 1–6; Jan. 1918.

Continuous and Discontinuous Variations and Their Inheritance i Peromyscus. Part I. Amer. Naturalist, vol. 52, pp. 177–208; Apr May 1918.

Modern Conceptions of Heredity and Genetic Studies at the Scripps In stitution. Scripps Institution Bull., no. 3, 24 pp.; Oct. 19, 1917.

RR, J. G., Superintendent of Cultivations, Citrus Experiment Station.

Notes on Hardpan. Calif. Citrograph, vol. 2, no. 11, p. 6; Sept. 1917.

Prickly Lettuce on Its Travels. *Ibid.*, vol. 3, no. 1, pp. 9–10; Nov. 1917.

ARTH, H. S., Curator of Birds, California Museum of Vertebrate Zoology.

Distribution of the Subspecies of the Brown Towhee (*Pipilo crissalis*). Condor, vol. 20, pp. 117–21; May 22, 1918.

Notes on Some Birds from Central Arizona. *Ibid.*, vol. 20, pp. 20–24; Jan. 18, 1918.

Observations on Some Fresno County Birds. *Ibid.*, vol. 19, pp. 129–30; July 25, 1917.

Pacific Coast Jays of the Genus Aphelocoma. Univ. Calif. Publ. Zoology, vol. 17, pp. 405–22; Feb. 1918.

Review: Chapman. *The Distribution of Bird-Life in Columbia; a Contribution to a Biological Survey of South America.* Condor, vol. 20, pp. 95–97; Mar. 20, 1918.

Review: Munro. *Report on Field-Work in Okanagan and Shuswap Districts, 1916.* *Ibid.*, vol. 20, p. 48; Jan. 18, 1918.

Review: Wayne. *A List of Avian Species for Which the Type Locality Is South Carolina.* *Ibid.*, vol. 19, p. 146; July 25, 1917.

Revision of the Marsh Wrens of California. Auk, vol. 34, pp. 308–18; July 1917.

Study of the Races of the White-fronted Goose (*Anser albifrons*) occurring in California [with H. C. Bryant]. Univ. Calif. Publ. Zoology, vol. 17, pp. 209–22; Oct. 1917.

Subspecies of the Oregon Jay. Condor, vol. 20, pp. 83–84; Mar. 20, 1918.

EET, W. L., Instructor in Pomology.

Comments on the Mendocino Apple Annual. Mendocino Beacon, vol. 40, no. 9, p. 4; Nov. 1917.

Curing of Prunes. Rural World, vol. 3, no. 35, p. 7; June 1918.

EZY, O., Zoologist in the Scripps Institution for Biological Research.

On the Orientation of *Erythropsis* [with C. A. Kofoid]. Univ. Calif. Publ. Zoology, vol. 18, pp. 89–102; Dec. 1917.

YLOR, E. R., Professor of the Law and Dean of the Hastings College of the Law.

Fusion of Law and Equity. Univ. of Pennsylvania Law Rev., pp. 17–27; Dec. 1917.

True Path to a Proper Administration of Justice. Calif. Law Rev., vol. 6, pp. 191–97; Mar. 1918.

YLOR, R. H., Assistant Professor of Pomology.

Red Spider Control on Almonds. Calif. Almond Growers' Exchange. Bull. no. 170, p. 12; June 1918.

Summer Pruning and Suckering of Almonds. *Ibid.*, no. 168, p. 12; Apr. 1918.

THIELE, H., Fellow in the Lick Observatory.

Observation of Nova Monocerotis. Harvard College Observatory Bu no. 654, p. 1; 1918.

Observations Connected with the Occultation of Seven Aquarii Venus. Astron. Soc. of the Pacific. Publ., vol. 30, pp. 166–70; Ap 1918.

TUCKER, R. H., Astronomer, Lick Observatory.

Longitude from Observation of the Moon. Popular Astronomy, vol. 2 pp. 400–08; June 1918.

Magnitude Equation and the Visual Scale. Univ. Calif. Lick Observ tory Bull., vol. 9, no. 307, pp. 136–43; Apr. 1918.

Miscellaneous Meridian Circle Results. *Ibid.*, vol. 9, no. 308, pp. 14 46; Apr. 1918.

Visual Magnitude Scale and the Count of Stars. *Ibid.*, vol. 9, no. 31 pp. 162–69; June 1918.

TUFTS, W. P., Assistant Professor of Pomology.

Packing of Apples in California. Univ. Calif. Agric. Exp. Sta. Cir no. 178, 31 pp.; Oct. 1917.

VAN NORMAN, H. E., Professor of Dairy Management, Vice-Director of th Agricultural Experiment Station and Dean of the University Far School.

Dairying in Relation to the Citrus Industry. Address at the Dedic tion of the Citrus Experiment Station, Riverside, California. Cali Cultivator, vol. 50, pp. 456–57; Apr. 13, 1918. Reprinted in othe agricultural journals.

VARNEY, B. M., Instructor in Geography.

Local Wind of the Foehn Type near San Francisco Bay. Monthl Weather Rev., vol. 45, pp. 539–40; Nov. 1917.

Meteorological Synopsis of Berkeley. Univ. Calif. Dept. of Geograph 2nd ser., vol. 6, nos. 2–12; Aug. 1917–June 1918.

Sunshine and Its Relation to City Planning. Geographical Rev., vol. p. 491; Dec. 1917.

VESTAL, C. M., Assistant Professor of Animal Husbandry.

Helpful Hints to Hog Raisers. Univ. Calif. Agric. Exp. Sta. Circ. n 201, 7 pp.; June 1918.

WALKER, E. L., Associate Professor of Tropical Medicine.

The Etiologic Agent and the Localizing Factor of the Abscesses i Myositis purulenta tropica. Jour. of Infectious Diseases, vol. 21 pp. 298–302; Sept. 1917.

Etiology of Granuloma inguinale. Jour. of Medical Research, vol. 3 pp. 427–40; Jan. 1918.

Observations on Leishmaniasis and Pseudo-Leishmaniasis in th Amazon Basin. New Orleans Medical and Surgical Jour., vol. 7 pp. 283–92; Sept. 1917.

ASHBURN, O. M., Assistant Professor of Classical Archaeology.

Centers of Greek Life. Univ. Calif. Syllabus Ser., 32 pp.; Jan. 1918.

General History of Ancient Art. Univ. Calif. Syllabus Ser., 100 pp.; Sept. 1917.

The Vivenzio Vase and the Tyrannicides. Amer. Jour. of Archaeology, 2nd ser., vol. 22, pp. 146–53; Apr.–July 1918.

ATERMAN, T. T., Assistant Professor of Anthropology.

The Yana Indians. Univ. Calif. Publ. Amer. Archaeology and Ethnology, vol. 13, pp. 35–102; Feb. 1918.

AYNICK, D. D., Instructor in Soil Chemistry and Bacteriology.

Chemical Composition of the Plant as Further Proof of the Close Relation between Antagonism and Cell Permeability. Univ. Calif. Publ. Agric. Sciences, vol. 3, no. 8, pp. 135–242; June 1918.

Moisture Equivalent Determinations of Salt Treated Soils and Their Relation to Changes in the Interior Surfaces [with L. T. Sharp]. Soil Science, vol. 4, no. 6, pp. 463–69; Dec. 1917.

Variability in Soils and Its Significance to Past and Future Soil Investigations. I. A Statistical Study of Nitrification in Soil. Univ. Calif. Publ. Agric. Sciences, vol. 3, no. 9, pp. 243–70; June 1918.

EEKS, W. S., Associate Professor of Mining.

Displacement Tanks. Mining and Scientific Press, vol. 115, pp. 855–56; Dec. 15, 1917.

Same. Western Engineering, vol. 9, pp. 24–25; Jan. 1918.

Same. Compressed Air Magazine, vol. 23, pp. 8690–92; Mar. 1918.

Drop in Pressure of Compressed Air Hose. Mining and Scientific Press, vol. 115, pp. 504–05; Oct. 1917.

Testing an Air Compressor. *Ibid.*, vol. 116, pp. 479–82; Apr. 1918.

Same. Western Engineering, vol. 9, p. 24–27; Jan. 1918.

HEELER, B. I., President of the University.

Address at the Dedication of the Library of French Thought. Univ. Calif. Chronicle, vol. 19, no. 4, pp. 399–401; Oct. 1917.

Commencement Address, 1917. *Ibid.*, vol. 20, no. 1, pp. 116–23; Jan. 1918.

Message to the Japanese Student. Japanese Student, vol. 2, no. 4, p. 141; Apr. 1918.

Our State University and the War. Argonaut, vol. 82, no. 2129, p. 19; Jan. 12, 1918.

Report of State Council of Defense, Committee on Resources and Food Supply. Univ. Calif. Jour. of Agric., vol. 5, no. 1, p. 19; Oct. 1917.

The State Supported and Managed Institution. Address Delivered at Meeting of Dept. of Superintendence, National Education Association, Atlantic City, N. J., Feb. 27, 1918. School and Society, vol. 7, no. 170, pp. 361–64; Mar. 30, 1918.

The University's Part in the War. Oakland Enquirer, Jan. 26, 1918.

World Needs Californians. Grizzly Bear, vol. 22, no. 5, p. 4; Mar. 1918.

Wickson, E. J., Professor of Agriculture, Emeritus.

California Dried Fruit Industries. Pacific Rural Press, vol. 95; Jun 15, 1918.

California Seed Production. *Ibid.*, vol. 95; June 29, 1918.

California Vegetables in Garden and Field. 4th ed., revised. Sa Francisco, Pacific Rural Press, 1917. 318 pp.

California's Pioneer Nurserymen. Pacific Rural Press, vol. 94; Dec 15, 1917.

Development of California Fruit Industries. *Ibid.*, vol. 95; Mar. 3 Apr. 6, 13, 20, 1918.

How California Came to Know Beans. *Ibid.*, vol. 94; Nov. 17, 1917.

Organization of California Horticulture. *Ibid.*, vol. 94; Nov. 24, 1917.

Woll, F. W., Professor of Animal Nutrition.

California State Dairy Cow Competition. Hoard's Dairyman, vol. 53 pp. 1008–24; July 20, 1917: vol. 54, pp. 498–99; Nov. 2, 1917.

Same. Calif. Cultivator, vol. 49, p. 358; Oct. 6, 1917: vol. 50, pp. 389 405; Mar. 30, 1918.

Feeding Stuffs of Minor Importance. Univ. Calif. Agric. Exp. Sta Circ. no. 167, 7 pp.; Aug. 1917.

Milking Machines. Pacific Dairy Rev., vol. 21, pp. 1–2; June 28, 191

Testing Milk and Its Products [with E. H. Farrington]. 24th ed Madison, Wis., Mendota Book Co., 1918. 297 pp.

Trials with California Silage Crops for Dairy Cows [with E. C Voorhies]. Univ. Calif. Agric. Exp. Sta. Bull. no. 282, 22 pp. Aug. 1917.

War-Time Rations for Dairy Cows. Calif Cultivator, vol. 50, pp. 495 510; Apr. 20, 1918.

Same. Pacific Rural Press. vol. 95, p. 384; Mar. 23, 1918.

Wulzen, R., Instructor in Physiology.

Some Chemotropic and Feeding Reactions of *Planaria maculata*. Bio logical Bull., vol. 33, pp. 67–69; Aug. 1917.

Wythe, M. W., Assistant in California Museum of Vertebrate Zoology.

Sierra Junco Breeding at Berkeley. Condor, vol. 19, p. 185; Dec. 7 1917.

SUNDAY HALF-HOURS OF MUSIC IN THE GREEK THEATRE

BETWEEN JULY 1, 1917, AND JUNE 30, 1918

ly 1—The Albany Municipal Band.

ly 8—Mr. Gilbert Reek, violinist; Mr. George Keil, accompanist.

ly 15—The Joaquin Miller Club.

ly 22—Mme. Ellen Beach Yaw, prima donna soprano; assisted by Mr. Frederick Maurer, Jr., at the piano; Miss Ernestine Howells, flutist; Miss Bernice Sternberg, violinist.

ly 29—Mrs. R. D. Hart, soprano; Mr. Lincoln S. Batchelder, pianist.

ıg. 26—The Band of Islam Temple, Nobles of the Mystic Shrine; George W. Bennett, bandmaster.

pt. 2—Miss Marion Ramon Wilson, dramatic contralto, formerly of the Petrenz Opera Company, Dresden; Mr. Frederick Maurer, Jr., accompanist.

pt. 9—Miss Harriet H. Pasmore, contralto (Teacher of Singing, Pomona College); Mrs. Suzanne Pasmore Brooks, accompanist; and Mr. H. B. Pasmore, baritone, with Miss Eva Walker, accompanist.

pt. 16—Mrs. Olive Reed Cushman; Mrs. Edna Fischer Hall, contralto; Mrs. Cardinal L. Goodwin, lyric soprano; Mrs. John O. Lofquist, mezzo-soprano; Mrs. Anita Putzman, contralto; Miss Olive Reed, violinist; Mr. Edgar Thorp, pianist.

pt. 23—Mr. Howard E. Pratt, tenor; Mr. Thomas Frederick Freeman, accompanist.

pt. 30—California Trio: Mr. Milton Frumkin, '19, violinist; Mr. Charles S. Edwards, '19, 'cellist; Mr. Elmore Roberts, '18, pianist.

t. 7—Programme presented for the Armenian Committee by Mr. Bruce Cameron, tenor; Mrs. Marian Holmes Nash, contralto; Mrs. Clark Pomeroy, accompanist; Master Joseph Lampkin, violinst, with Signor Antonio de Grassi, accompanist, Mr. Kajetan Attl, harpist.

Oct. 14—Mr. Walter Handel Thorley, pianist; Mr. Hother Wismer, violini
Mme. Alberta Carina, soprano; Mr. Hugh Allan, baritone,
the de Vally French Opera Company.

Oct. 21—Signor E. Porcini, baritone, Mrs. Maybel Sherburne West,
companist; and Mr. Philip Fabello, violinist with Mr. Arth
Conradi, accompanist.

Oct. 28—Mrs. E. W. Florence, dramatic soprano; Mrs. Frank Elliott,
companist; and Mr. Roy Williams, violinist; Miss Beatr
Lucretia Sherwood, accompanist.

Nov. 4—Miss Clara Freueler, soprano; Mrs. Martha Dukes Park,
pianist.

Nov. 18—Mrs. Julia Musser, lyric soprano; Mr. Roscoe Warren Lucy,
companist; and Miss Aileen Murphy, pianist.

Nov. 25—Mr. G. Artieda, tenor; Miss Beatrice Lucretia Sherwood, piani
and Mrs. Russell Tracy Crawford, pianist; Miss Dorotha C
lendar, 'cellist; Mr. Parker Hall, violinist.

Mar. 3—Band of the Columbia Park Boys' Club, Andrew J. Truhl,
bandmaster.

Mar. 10—Miss Nelly Laura Walker, dramatic soprano; Miss Ethel Den
accompanist.

Mar. 17—Homer Henley, baritone; Lincoln S. Batchelder, pianist.

Mar. 24—Boy Chorus of the Columbia Park Boys' Club.

Mar. 31—U. C. Glee Club and De Koven Club, Clinton R. Morse, lead
Miss Ruth Bowers, soprano; Miss Ruth Crandall, contral
Miss Olive Reed, violinist; and Mme. Carusi and Miss Lilli
Simonson, accompanists.

Apr. 7—Homer Henley, baritone; Lincoln S. Batchelder, pianist.

Apr. 14—University Farm Glee Club, Homer Henley, director; Mrs. L.
Hunt, accompanist.

Apr. 21—Miss Nelly Laura Walker, dramatic soprano; Miss Ethel Den
pianist.

UNIVERSITY MEETINGS

ug. 20—President Benjamin Ide Wheeler.

ug. 31—Hon. J. A. Elston, '97, M.C.

William MacDonald, Ph.D., Lecturer in Political Science.

Music: Cornet solo by J. L. Ruddick, '17; accompanist, Miss L. R. Ruddick.

pt. 3—(Labor Day).

A. W. Brouillet, President of the San Francisco Labor Council.

Ralph McLeran, Member of Building Contractors' Association.

pt. 14—Warren C. Gregory, '87, formerly Director with the Commission for Relief in Belgium.

H. Morse Stephens, Litt.D., Sather Professor of History.

Music: Maude Ellis, '19, vocal solo; Alice Clemo, '20, accompanist.

pt. 28—Andrew Smith, Head Football Coach.

Arthur S. Eakle, Ph.D., Associate Professor of Mineralogy.

Major David P. Barrows, U. S. R.

Music: Charles S. Edwards, '19, 'cello solo; Miss Carrie Jones, accompanist.

t. 12—Simon Flexner, M.D., Director of the Rockefeller Institute for Medical Research.

C. E. Chapman, Ph.D., Assistant Professor of Latin-American and Californian History.

Music: Miss Evelyn Farrar, '17, vocal solo; Miss Katherine C. Sharpless, '17, violin obligato; Beatrice Winder Martens, '17, accompanist.

t. 26—Wigginton Ellis Creed, '98, President of the Alumni Association.

John L. Clymer, Director of the Bureau of Development, Pacific Coast Division, American Red Cross Association.

Joseph J. Rosborough, ex-'00, representing the Liberty Loan Committee.

Music: Emanuel S. Rosenthal, '18, vocal solo; Jerome Haas Bayer, '19, accompanist.

Nov. 2—Everett J. Brown, '98.
Milton H. Schwartz, '01.
John A. Stroud, Jr., '13.
Daniel Parsons Foster, '17.
Music: The University Band.

Nov. 9—National Service Meeting.
Dr. James A. Francis, Official Lecturer, Western Dept., Y.M.C.A. War Council.
Music: University Glee Club.

Nov 23—Carl M. Warner, '99.
Felix Frankfurter, A.B., LL.B., Professor of Law in Harvard University and Secretary of the President's Mediation Committee.
Music: Treble Clef Double Quartette.

Dec. 7—William Trufant Foster, Ph.D., LL.D., President of Reed College, Portland Oregon.
Music: Combined University of California Orchestras; Treble Clef Quartette; University of California Glee Club; University of California Band.

Jan. 18—Thomas Waterman Huntington, M.D., Professor of Clinical Surgery, Emeritus.
William Kelly Prentice, Ph.D., Sather Professor of Classical Literature.
Music: Mrs. Helen Young Crawford, ex-'14, pianist; Miss Dorotha Callendar, 'cellist; Mr. Parker Hall, '19, violinist.

Feb. 1—Benzion Mossinsohn, Ph.D., Head of Herzl Gymnasium in Jaffa, Palestine.
Ralph Barton Perry, Ph.D., Lecturer in Philosophy on the Mills Foundation.
Music: Lawrence Lewis, '19, soloist; Miss Elsa Schroeder, '18, accompanist.

Feb. 15—Silas Evans, D.D., LL.D., President of Occidental College.
John Campbell Merriam, Ph.D., Professor of Palaeontology and Historical Geology.
Music: Miss George Hine, '20, violinist; Miss Ruth Jones, '20, accompanist.

Mar. 1—Dr. Alejandro Alvarez, Secretary General of the American Institute of International Law; Member of the Permanent Court of Arbitration at the Hague.
Ralph Palmer Merritt, '07, Federal Food Commissioner for California.
Music: Charles S. Edwards, '19, 'cellist; Elmore W. Roberts, '19, accompanist.

. 15—Major Herbert Charles Moffitt, Professor of Medicine and Dean of the Medical School.

James Henry Breasted, Ph.D., Professor of Egyptology and Oriental History, and Director of the Haskell Oriental Museum, University of Chicago.

Music: University of California Students' Orchestra.

. 29—T. P. O'Connor, Member of Parliament.

Jane Addams, LL.D., Founder of Hull House, Chicago.

12—Leslie Brown, '18
Marian R. Brown, '18
Vera L. Christie, '18
Alice D. deWit, '18
Margaret W. Honeywell, '18
Victor L. Furth, '18
Edward M. Jaffa, '18
Anthony Mitchell,'18
John O'Melveny, '18
John L. Reith, '18
Claude Rohwer, '18
Olin Wellborn III, '18
Frank F. Hargear, '19.

SECRETARY OF THE REGENTS

UNIVERSITY OF CALIFORNIA,
BERKELEY, July 1, 1918.

To the Honorable Board of Regents
of the University of California:

GENTLEMEN: I have the honor of presenting the followi Secretary's Report for the year ending June 30, 1918.

Respectfully submitted,

R. G. SPROUL,
Assistant Secretary of the Regents.

REGENTS OF THE UNIVERSITY, 1917–18

REGENTS EX OFFICIO

is Excellency William Dennison Stephens..............................Sacramento
Governor and ex officio President of the Regents

lement Calhoun Young, B.L..........................276 Post Street, San Francisco
Speaker of the Assembly

on. Edward Hyatt, B.S..Sacramento
State Superintendent of Public Instruction

on. John M. Perry, to Mar. 1, 1918......10 West Weber Avenue, Stockton
President of the State Board of Agriculture

ivingston Jenks, A.B., LL.B.....Mechanics' Institute Bldg., San Francisco
President of the Mechanics' Institute

enj. Ide Wheeler, Ph.D., LL.D., Litt.D., L.H.D.....California Hall, Berkeley
President of the University

eorge C. Roeding...Box 1310, Fresno
President State Board of Agriculture

APPOINTED REGENTS

The term of the appointed Regents is 16 years, and terms expire March 1 f the year indicated. The names are arranged in the order of original ccession to the Board.

saias William Hellman, Esq.. 1918
Wells, Fargo-Nevada National Bank, San Francisco

rs. Phoebe Apperson Hearst.. 1930
Pleasanton. Business address: 410 Hearst Building, San Francisco

rthur William Foster, Esq.. 1932
1210 James Flood Building, San Francisco

arrett William McEnerney, Esq.. 1920
2002 Hobart Building, San Francisco

uy Chaffee Earl, A.B.. 1918
14 Sansome Street, San Francisco

Rudolph Julius Taussig, Esq.. 1932
Main and Mission Streets, San Francisco

James Wilfred McKinley, B.S.. 1922
706 Security Building, Los Angeles

John Alexander Britton, Esq.. 1930
445 Sutter Street, San Francisco

Charles Stetson Wheeler, B.L.. 1928
Nevada Bank Building, San Francisco

William Henry Crocker, Ph.B.. 1924
Crocker National Bank, San Francisco

Philip Ernest Bowles, Ph.B.. 1922
American National Bank, San Francisco

James Kennedy Moffitt, B.S. 192
First National Bank, San Francisco

Rev. Charles Adolph Ramm, B.S., M.A., S.T.B. 192
1100 Franklin Street, San Francisco

Edward Augustus Dickson, B.L. 192
1631 Cimarron Street, Los Angeles

James Mills, Esq. 192
Hamilton City, California

Chester Harvey Rowell, Ph.B. 192
Fresno, California

OFFICERS OF THE REGENTS

His Excellency William Dennison Stephens .... Sacrament
President

Ralph Palmer Merritt, B.S. .... 220 California Hall, Berkele
Comptroller

Robert G. Sproul, B.S. .... 220 California Hall, Berkele
Assistant Comptroller and Assistant Secretary

Victor Hendricks Henderson, B.L., to Apr. 16, 1918 ....
.... 104 California Hall, Berkele
Secretary

Mortimer Fleishhacker....Anglo-California Trust Company, San Francisc
Treasurer

Warren Olney, Jr., A.B., LL.B.....Merchants' Exchange Bldg., San Francis
Counsel

STANDING COMMITTEES OF THE REGENTS FOR 1917–18

Finance: Regents Earl, Foster, Britton, Moffitt, Taussig, and as Membe Emeritus, Regent Hellman.

Grounds and Buildings: Regents Britton, Mrs. Hearst, Jenks, Bowles, an C. S. Wheeler.

Medical Instruction: Regents Crocker, Moffitt, Ramm, Dickson, and Taussi

University Hospital: Regents Crocker, Taussig, Britton, Earl, and Moffit

Agriculture: Regents Foster, Dickson, Jenks, Mills, Roeding, and Perry (t 1918); Regent Bowles, alternate.

Lick Observatory: Regents Ramm, Crocker, McEnerney, and Young.

Curriculum and Degrees: Regents Rowell, Moffitt, and C. S. Wheeler.

Wilmerding School: Regents Taussig, Earl, and Moffitt.

Scripps Institution for Biological Research: Regents Dickson, McKinle and Hyatt.

Executive Committee: This committee consists of the chairmen of all th other committees.

SPECIAL COMMITTEES OF THE REGENTS DURING 1917–18*

mmittee on Committees for 1918–19: Regents Earl, Britton, Dickson, Moffitt, and Taussig.

mmittee to Consider Opportunities to Aid in the Prosecution of the War: Regents Jenks, Moffitt, Foster, Ramm, and Taussig.

STANDING COMMITTEES OF THE REGENTS FOR 1918–19*

inance: Regents Earl, Foster, Britton, Moffitt, Taussig, and as Member Emeritus, Regent Hellman.

rounds and Buildings: Regents Britton, Mrs. Hearst, Jenks, Bowles, and C. S. Wheeler.

edical Instruction: Regents Moffitt, Crocker, Ramm, Dickson, and Taussig.

niversity Hospital: Regents Crocker, Taussig, Britton, Earl, and Moffitt.

griculture: Regents Foster, Dickson, Jenks, Mills, and Roeding; Regent Bowles, alternate.

ick Observatory: Regents Ramm, McEnerney, Young, and Crocker.

urriculum and Degrees: Regents Rowell, Moffitt, and Bowles.

ilmerding School: Regents Taussig, Earl, and Moffitt.

cripps Institution for Biological Research: Regents Dickson, McKinley, and Hyatt.

xecutive Committee: This committee consists of the chairmen of all the other committees.

greement with Willis Polk and Company:

On July 2, 1917, the Regents entered into an agreement with Willis olk and Company for architectural services for the Hallidie Building, be erected on the property of the Regents at Sutter and Kearny streets, an Francisco.

ontribution to American University Union:

On August 14, 1917, it was voted to contribute toward the American niversity Union in Europe, at the rate of $500 per annum so long as the ar shall continue, for the maintenance in Paris, and at such other places the countries of the Allies as may seem desirable, of an American niversity Union, for the benefit of American university and college men ho are in Europe for military or other service in the cause of the Allies.

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* The President of the Board of Regents and the President of the University are officio members of all committees of the Board. In each committee the name of the airman appears first and the name of the vice-chairman second.

Lease of Hallidie Building:

On August 14, 1917, the Regents approved the execution of an agreement with Robert S. Atkins and the Yawman and Erbe Manufacturing Company, for the lease of the Hallidie Building, at Sutter and Kearny streets, a seven-story and basement reinforced concrete building, to cost not more than $200,000, at a rental of $2400 per month, for a term of 15 years from the time of the completion of the building.

Liberty Bonds:

On August 14 the purchase was approved of $50,000 of Liberty bonds

Agreement with M. E. and J. H. Von Schroeder:

On August 14, 1917, the Regents approved the action of the Finance Committee in having authorized the execution of the following agreement between the Regents and Mary Ellen Von Schroeder and John H. Von Schroeder, the California Pacific Title Insurance Company, A. W. Foster and the Von Schroeder Investment Company:

THIS AGREEMENT, made this .... day of ...., 1917 by and between The Regents of the University of California, a corporation, the party of the first part, Mary Ellen Von Schroeder and John H. Von Schroeder, the parties of the second part, California Pacific Title Insurance Company, a corporation, party of the third part, A. W. Foster, party of the fourth part, and Von Schroeder Investment Company, a corporation, party of the fifth part, WITNESSETH:

WHEREAS the parties of the second part heretofore mortgaged to the party of the first part certain real property in the County of Marin, State of California, commonly known as the Hotel Rafael property, together with certain personal property thereon, and, subsequent to the execution and recordation of said mortgage, mortgaged said property to the party of the third part, and subsequent to the execution and recordation of said last mentioned mortgage executed two mortgages of said property to the party of the fourth part, and subsequent to the execution and recordation of said last mentioned two mortgages conveyed said property to the party of the fifth part, which is now the owner thereof, subject to the aforesaid mortgages; and

WHEREAS the party of the first part has brought suit to foreclose said first mentioned mortgage, and the mortgaged property is, and for a long time past has been, unoccupied and unused and the parties of the second and fifth parts are unable to provide the funds required for the proper protection and preservation of the property, and the party of the first part has advised the other parties that it would apply, in said foreclosure suit, for the appointment of a receiver to take charge of the mortgaged property, for the purpose of protecting and preserving the same,

NOW, THEREFORE, for the purpose of avoiding the appointment of such receiver, with the expense and other incidents of such appointment, it is agreed that the party of the first part shall be immediately let into possession of the mortgaged premises, with all the rights of a mortgagee in possession, and shall be authorized to employ a care-taker or care-takers for the protection and preservation of said property and to expend such sums as it may deem necessary for such purposes and for making any provements necessary in the judgment of the party of the first part to ake the mortgaged property more salable; that any sums so expended all constitute an indebtedness repayable by the parties of the second d fifth parts, with interest at six per cent per annum from the respec- ve dates of expenditure, and shall be secured by the lien of said mort- ge of the party of the first part and included in the judgment of fore- osure thereof if such judgment be rendered; that inasmuch as the mort- ged property is not yielding any rents, profits or income whatever, and is not contemplated that it will yield any prior to said judgment, the rty of the first part shall not be responsible for any failure to obtain nts, profits or income from the mortgaged property, provided, however, at in case any such rents, profits or income are obtained the same shall accounted for by the party of the first part and applied to the minution of any expenditures by the party of the first part made here- der, and, if there be any surplus, to the diminution of the mortgage debtedness due the party of the first part.

It is further agreed that the parties of the second, third, fourth and th parts will, by their attorneys in said foreclosure action, sign such ipulations therein as may be requested by the party of the first part asonably designed for the more effective and easy carrying out of this reement.

In witness whereof, the parties of the first, third and fifth parts have reunto, by their respective officers thereunto duly authorized, signed eir corporate names and affixed their corporate seals, and the parties the second and fourth parts have hereunto signed their respective mes, all in quintuplicate, the day and year first above written.

The Regents of the University of California.

op and Engineering Building at University Farm:

On August 14, 1917, the Regents authorized the erection of a shop and ricultural engineering building, at a cost of not to exceed $5000, at the niversity Farm at Davis.

rnegie Pension System:

On August 14, 1917, it was reported to the Board that the following tter had been received from Dr. Henry S. Pritchett, President of the rnegie Foundation for the Advancement of Teaching:

June 1, 1917.

esident Benjamin Ide Wheeler,
University of California,
Berkeley, California.

ar President Wheeler:

I am directed by the Trustees of the Carnegie Foundation to com- unicate to all associated colleges and universities the following infor- ation:

At a meeting held on May 18, the Trustees considered the report on e plan of insurance and annuities, prepared by a joint commission ap- inted in November, 1916. A copy of this report is enclosed. The ustees of the Foundation took the following action:

1. The Trustees accept the fundamental principles of a pension syste as defined in the report of this commission—that is to say, a pensi system for college teachers should include the principle of the contrib tory pension, of coöperation between the teacher and his college, and the creation of a reserve for each pension.

2. As a means of carrying out this plan the Trustees approve the co bination of insurance and annuity benefits as proposed by the Comm sion, and accept the proposed Teachers Insurance and Annuity Associati as outlined in this report as a practical and effective method of providi insurance and pension benefits for college teachers. The organization this agency is completely explained in the report of the President of t Foundation now about to be distributed.

3. The Trustees of the Foundation have asked the Carnegie Corpo tion of New York to coöperate with the Foundation in carrying out t recommendations of this commission by enabling the Foundation to fulf the reasonable expectations of teachers in the associated colleges a universities prior to November 17, 1915; by enabling the Foundation afford some assistance during the transition period of the next twenty yea toward the retiring allowances of old teachers in institutions which a not now, but may later be, associated with the Foundation; and supplying the capital necessary to establish the Teachers Insurance a Annuity Association.

4. The Trustees of the Carnegie Foundation therefore notify all as ciated colleges and universities of this action and inform them that t privileges of teachers in the associated colleges under the present ru will not extend to those entering these institutions after the date me tioned.

5. Full information will be given in due time both as to the coöpe tion of the Carnegie Corporation and as to the conditions and benefits the contributory system to be inaugurated. It is expected that t Insurance and Annuity Association will be incorporated and organiz before the end of 1917.

This communication is sent by direction of the Trustees of the Fou dation. It is requested that the report of the Commission be consider as a confidential paper until June 11th.

I am, very sincerely yours,

Henry S. Pritchett, President.

Death of Professor Loughridge:

On August 14, 1917, President Wheeler reported the death in Wa Texas, on July 1, 1917, of Robert Hills Loughridge, Professor Emerit of Agricultural Chemistry. He came to the University in 1891 as Assis ant Professor of Agricultural Chemistry. In 1906 he was made Associa Professor of Agricultural Chemistry, and in 1909 he became Profess Emeritus of Agricultural Chemistry.

Agreement, Southern Pacific Company:

On August 14, 1917, the President and Secretary of the Board we authorized to execute an agreement with the Southern Pacific Compa for an easement from the Southern Pacific Company to the Regents f a pipe line across the property of the Southern Pacific Company to t lands of the Citrus Experiment Station at Highgrove, Riverside Count

hool of Military Aeronautics:

On August 14, 1917, the Regents approved the following agreement:

THESE ARTICLES OF AGREEMENT, entered into this 27th day of June, ineteen hundred and seventeen, between Arnold N. Krogstad, Captain, M.A. Signal Corps, United States Army, of the first part, and The egents of the University of Calfiornia, in the County of Alameda, State f California, of the second part,

WITNESSETH. that the said Arnold N. Krogstad, Captain, J.M.A. Signal orps, United States Army, for and in behalf of the United States of merica, and the said Regents of the University of California (hereinafter designated as the contractor) do covenant and agree, to and with ach other, as follows, viz:

Article I. The contractor shall provide, properly equip and maintain, t the University of California a school of military aeronautics of sufficient size to enable the adequate ground training thereat of at least four undred (400) students at a time.

Article II. The contractor shall provide at the school a sufficient number of competent instructors to give lectures, demonstrations, and other nstruction, on the following subjects: ''Aeronautical Motors,'' ''Theory f Flight,'' ''Cross Country and General Flying,'' ''Aerial Observation,'' 'Gunnery,'' ''Signalling and Radio,'' ''Infantry Drill,'' ''Calisthenics.''

Article III. The contractor shall, during the period commencing uly 1, 1917, and ending June 30, 1918, give ground training in the subjects mentioned in Article II to officers and enlisted men of the Aviation ection, Signal Reserve Corps, designated for such training by the Signal orps, in accordance with such regulations relating to the schedule of raining and instruction for enlisted men in schools of military aeronautics as may be issued by the Office of the Chief Signal Officer from ime to time.

Article IV. That for and in consideration of the faithful performance f the stipulations of this contract, the contractor shall be paid at the ffice of the contracting officer for all services rendered in conformity vith the requirements of this contract, compensation as follows, for each tudent instructed in behalf of the Signal Corps: Ten ($10.00) dollars per veek for each of the first four (4) weeks' instruction and five ($5.00) lollars for each succeeding week of instruction; *provided,* that in no case hall the total compensation for each student be more than sixty-five $65.00) dollars.

For each student found unsatisfactory, or relieved for any reason efore the completion of the course, payment shall be made at the rates bove specified, for the number of weeks' instruction actually rendered, p to and including the day of his release.

Article V. The contractor shall at all times coöperate to the best of his bility with the officer of the Signal Corps detailed as commandant at his chool, and shall endeavor to fulfill the above stipulations in a manner est calculated to coincide with the wishes of the Signal Corps.

Article VI. The contractor shall permit representatives of the United tates to be present at the school at any and all times to witness instruction and work; to inspect and examine all equipment, and to pass upon ts fitness; and to examine and verify all records, in connection with the ervices and instruction to be performed under this agreement.

Article VII. The United States reserves the right to determine the daptability of students for instruction in ground training, and at any ime may withdraw such students as in the judgment of authorized representatives of the Signal Corps do not appear to possess the necessary ptitude.

Article VIII. That the contractor assumes responsibility for all damag loss, or destruction of equipment by students during the course of instru tion and tests.

Article IX. That in case of the failure of the said contractor to pr vide the facilities, equipment, and personnel above specified, on or befo September 1, 1917, this contract in the discretion of the Signal Cor may be declared null and void.

Article X. The contractor further agrees to hold and save the Unite States harmless from and against all and every demand, or demands, c any nature or kind for, or on account of, the use of any patented inve tion, article, or process included in work to be done under this contrac

Article XI. Neither this contract nor any interest herein shall be tran ferred to any other party or parties, and in case of such transfer th United States may refuse to carry out this contract either with the tran ferer or the transferee, but all rights of action for any breach of thi contract by said contractor are reserved to the United States.

Article XII. No member of, or delegate to Congress, nor any perso belonging to, or employed in, the military service of the United State is or shall be admitted to any share or part of this contract, or to an benefit which may arise therefrom. However, if this contract is mad with an incorporated company, this stipulation, so far as it relates t members or delegates to Congress, is not to be construed to extend to thi contract.

Article XIII. That it is expressly agreed and understood that thi contract shall be non-effective until an appropriation adequate to its ful fillment is made by Congress and is available.

Article XIV. That this contract shall be subject to approval of th Chief Signal Officer, United States Army.

In witness whereof, the parties aforesaid have hereunto placed thei hands the date first hereinbefore written.

A similar agreement was also entered into to cover the period May 2 to June 30, 1917.

Contracts:

During the year the following contracts were awarded:

For the Sutter Street building (Hallidie Building):		
Forderer Cornice Works, roofing and sheet metal work	$12,000.00	
A. Knowles, lathing and plastering	16,876.00	
Scott Company, plumbing and tile work	10,957.00	
Thomas Day Company, lighting fixtures	1,075.00	
Vermont Marble Company, marble work	1,600.00	
Schwarz and Gottlieb, glazing	10,400.00	
Mangrum and Otter, heating	4,565.00	
Stockholm and Allyn, carpentry	14,500.00	
		$71,973.00
For the Riverside Citrus Experiment Station:		
Miller Planing Mill, furniture and equipment	$1,957.00	
Cresmer Manufacturing Company, furniture and equipment	1,783.65	
L. C. Waldman, small buildings	4,078.00	
		7,818.65
For the University Hospital:		
D. N. and E. Walter, shades		1,779.00
For surfacing roads on the campus at Berkeley:		
Western Motor Draying Company (approximately)		6,000.00

recking Piedmont Avenue House:

On September 12, 1917, the action of the Finance Committee was proved in having authorized the execution of an agreement whereby lan Brothers agreed to pay $200 for the privilege of wrecking the use on Piedmont Avenue known as the Palmer House.

ethelin Agreement with T. Brailsford Robertson:

At a meeting of the Regents on September 12 the President and Secre-ry of the Board were authorized and instructed to execute the following greement with T. Brailsford Robertson, Professor of Biochemistry:

THIS INDENTURE, made this 7th day of September, 1917, between T. B. obertson, the party of the first part, and The Regents of the University f California, a corporation, the party of the second part, WITNESSETH:

WHEREAS the party of the first part is the discoverer of a medical reparation named Tethelin, covered by United States and British patents, nd is the owner of such preparation and of such patents and of the rade-name "Tethelin,"

NOW, THEREFORE, it is agreed as follows:

I

The party of the first part hereby conveys and grants to the party of he second part the said preparation, patents and trade-name, and all his ights as the discoverer of said preparation and the owner thereof and f said patents and trade-name, upon the following trust, to wit:

(*a*) To utilize the rights hereby granted in such manner as in the udgment of the party of the second part will best produce a monetary eturn therefrom and at the same time render the use of such preparation ost generally available for the benefit of the human race. The party of he second part shall have the right to sell or dispose in any other manner f said rights or any of them, in whole or in part, or to grant subsidiary ights and privileges thereunder, either upon royalties or otherwise. The arty of the second part agrees that it will use all reasonable diligence o utilize said rights as aforesaid, but it is particularly agreed, and the arty of the second part accepts said trust only upon the condition, that t shall be the sole judge as to what is reasonable diligence in the respect entioned, and that it shall not be pecuniarily or legally responsible for ny want of diligence in such respect unless the same be in bad faith or he equivalent of bad faith, and that in view of the fact that the party f the second part is a public eleemosynary corporation all of whose other unds are held upon other trusts, the party of the second part shall not e pecuniarily or legally liable under any circumstances whatsoever except o the extent of such rights or the proceeds, profits or returns thereof at he time of recovery against it in the hands of the party of the second art.

(*b*) To apply any proceeds, profits or returns from the utilization of aid rights, after paying the expenses of the party of the second part in onnection with the trust, to the reimbursement of the party of the first art in the sum of one thousand dollars ($1000) for expenses incurred by im in making such discovery of such preparation, and, in case of his isability, to the payment to him thereafter for his life of the sum of ve thousand dollars ($5000) annually, and in case of his death to the payment of a like amount to his wife for her life, and in case of the deat of both himself and his wife leaving a minor child or children, to th payment of a like amount to such child or children until such child o the youngest of such children shall have reached majority; provided however, that such annuities shall each year be payable only out of suc proceeds, profits or returns as may come in during that year and an balance on hand at the beginning of the year unexpended and unappropriated for the purposes mentioned in the following subdivision (subdivision *c*);

(*c*) To apply any unexpended balance of such proceeds, profits o returns to research work in Medicine and preferably in the Physiolog Chemistry and Pathology of Growth either under the auspices of the University of California or otherwise, it being the wish of the party of th first part, but not a condition, that in case such proceeds, profits o returns amount to a sum sufficient to justify it, such research work b conducted in part in Australia, either under the auspices of some institution of learning there or otherwise. The party of the second part shal direct such research work in consultation with the men hereafter named or their successors, as the first members of the Board of Directors of th Institute of Medical Research whose creation is hereinafter provided for The party of the second part shall have the right, subject to the provisions of subdivisions (*a*) and (*b*) preceding, to expend such proceeds profits, or returns on such research work either in whole or in part, or t accumulate the same in whole or in part, holding and investing such accumulation as a fund and expending the income of such fund in th maintenance of research work;

Provided, however, that in case at any time such proceeds, profits o returns are sufficient in the judgment of the party of the second part t justify it, it shall create an Institute of Medical Research which shall under the immediate direction of a board of directors of five members subject to the supervisory control of the party of the second part, carry on and direct the work of research mentioned. Such Institute, if created, shall also be authorized to conduct other kindred lines of research with funds received or appropriated by the party of the second part for that purpose from other sources, and particularly from the utilization of other discoveries transferred by the discoverers to the party of the second part, provided that in case of conveyance to or acquisition by the party of the second part of other discoveries, or patents or rights, from which, and from the discovery, patents and rights hereby conveyed, come proceeds which are joint to both, the party of the second part shall be the sole judge as to the relative proportion of such joint proceeds which are attributable to each of the joint sources thereof. Such Board of Directors shall in the first instance be composed of F. P. Gay, H. M. Evans, G. H. Whipple, C. D. A. Schmidt, and the party of the first part. Any vacancy in said board shall be filled on the nomination of the remaining members, approved by the party of the second part. The directors shall be persons themselves engaged directly and primarily in research work either of the character mentioned or of some kindred character, and upon their ceasing to be so engaged they shall be under obligation to resign as such directors, and if they do not resign their positions shall be declared vacant by the party of the second part and upon such declaration shall be vacant. The position of any director shall become vacant upon his attaining the age of sixty (60) years unless the party of the second part shall, for strong reason existing in the particular case, extend his term of office.

II

The party of the second part accepts the foregoing grant and convey- ce upon the trust above set out.

In witness whereof the party of the first part has hereunto signed s name and the party of the second part has by its officers thereunto ly authorized hereunto signed its corporate name and affixed its cor- rate seal all on the day and year first above written.

ontract with H. K. Mulford Company:

On February 13, 1918, the Regents authorized the President and Secre- ry of the Board to execute the following agreement with the H. K. ulford Company for the manufacture of tethelin, a medicinal product iscovered by Professor T. Brailsford Robertson:

This agreement, made this .... day of ...., one thousand ine hundred and eighteen, by and between The Regents of the University f California, a corporation of the State of California, the party of the rst part, and H. K. Mulford Company, a corporation organized and existng under and by virtue of the laws of the State of Pennsylvania, the arty of the second part, witnesseth:

Whereas, Letters patent of the United States numbered one million wo hundred eighteen thousand four hundred seventy-two (1,218,472) were ranted to one T. Brailsford Robertson on the sixth day of March, one housand nine hundred and seventeen, and letters patent were issued by he United Kingdom of Great Britain and Ireland on March twenty-third, ne thousand nine hundred and sixteen, numbered fifteen thousand six undred eighty-three (15,683), to said T. Brailsford Robertson, and said etters patent have been assigned by said T. Brailsford Robertson to the arty of the first part, both patents having to do with a product known s Tethelin and the trade name *Tethelin* has been registered in the United States on February twenty-seventh, one thousand nine hundred and seventeen, serial number one hundred fifteen thousand six hundred sixty-seven (115,667); and,

Whereas, the party of the second part is desirous of manufacturing Tethelin, containing said patent improvements;

Now, therefore, the parties hereto hereby mutually agree as follows:

(1) The party of the first part hereby licenses and empowers the party of the second part to manufacture and sell the compound known as Tethelin at its factory in the City of Philadelphia, State of Pennsylvania, nd such other place or places as it may from time to time determine, for the full period of five (5) years from the date hereof, and the said arty of the first part doth further give and grant unto the party of the second part the exclusive right to manufacture and sell said compound known as Tethelin for and during said term throughout the United States, Canada, Mexico and in all other countries in which the patent has been or may hereafter be registered or license therefor granted to the party of the first part or its nominee. The party of the first part does not hereby ovenant or agree to cause said patent to be registered in any other ountries, but does agree that, in case the party of the first part is unwilling so to do, the party of the second part may cause said patent to be registered in any other countries than the United States in the name of the party of the first part, provided it pays all costs and charges in the rocuring of the same as well as all taxes or other charges made or enforced in said other countries upon said patent process, as well as all legal

costs and charges incident thereto. The party of the first part agrees pay all taxes and other charges made or enforced in the United Stat upon said patented process. The party of the first part further covenan and agrees that this license shall be treated as an exclusive license manufacture and sell said product, Tethelin, and that it will not man facture or sell the same during the period hereof, and that it will gi to the party of the second part a full and complete knowledge of any a all secret methods known to it in the manufacture of said product, a that said party of the second part shall have the exclusive right to t use of the trademark name Tethelin in so far as the party of the fir part has the right to grant the same.

In case suit is brought against the party of the second part seeking restrain the manufacture or sale of Tethelin by it, it shall have the rig to cease manufacture of said preparation hereunder after giving writt notice thereof to the party of the first part, and in case it does cease manufacture or sell said product, this agreement shall terminate and at an end.

(2) The party of the second part agrees in consideration aforesaid manufacture Tethelin in its factory in the City of Philadelphia, State Pennsylvania, or at some other place or places in the United States durin said period of five (5) years, and to sell and dispose of said product the best advantage throughout the United States and elsewhere wherev it has a general line or sale of its manufactured products, and to mal full and true return to the party of the first part on January first an July first of each year during the term hereof of all Tethelin so man factured and sold by it and at said times to pay or cause to be paid the party of the first part a royalty of two and one-half (2½) cents p one hundred (100) milligrams of Tethelin sold by it during the precedin period of six (6) months.

(3) The party of the first part hereby gives and grants to the part of the second part an option to extend the lease or license hereby give for the further period of .... (....) years from the expiration hereo to the date of the expiration of said patent, to wit:..................... (....) year upon all of the terms and conditions herein specified, saving and exceptin only that the party of the second part shall pay to the party of the fir part a royalty of three and three-fourths (3¾) cents per one hundre (100) milligrams upon all Tethelin manufactured and sold by it durin said additional period instead of two and one-half (2½) cents per on hundred (100) milligrams as above provided, and that said lease or licens shall extend to the United States, Great Britain, and all other countri in which said patent has been registered, and the party of the first pa further covenants and agrees that the party of the second part shall hav the exclusive right and privilege of all improvements made by the latte in the manufacture of said compound during the life of this license lease or any extension thereof. The option for an extension hereb granted shall be exercised by written notice given by the party of th second part to the party of the first part at Berkeley, California, at leas three (3) months before the expiration of the five (5) year period herei provided for.

(4) It is mutually agreed that all of the covenants and conditior herein contained shall extend to and embrace the successors and assign of the respective parties hereto.

In witness whereof, the parties hereto have, by their officers ther unto duly authorized, signed their corporate names and affixed their cor porate seals, the day and year first above written.

ease to Alice C. Lynch:

On September 12, 1917, the Regents authorized the execution of a lease Alice C. Lynch of 1175 acres of land in San Luis Obispo and Monterey unties, for three years from February 1, 1918, at a rental of 50 cents er acre per annum.

eath of Professor Booth:

On September 12, 1917, President Wheeler reported the death in erkeley, on August 23, of Edward Booth, Assistant Professor of Chemstry, a member of the faculty since 1877.

ease to K. Hovden Company:

On October 9, 1917, The Regents approved a lease dated September 11, 917, to the K. Hovden Company of Lot No. 14 in Block No. 1, ''Map of he north half of the town of New Monterey,'' together with the buildngs and improvements thereon, for eight years, from September 1, 1917, o August 31, 1925, for the total rent of $800, payable in advance in equal nstallments of $100 each on the first day of September in each year durng the term of the lease, commencing September 1, 1917.

Mecca Land Company Deed:

At a meeting of the Regents on October 9 it was reported to the Regents that by a deed of trust made May 13, 1904, betwen the Mecca Land Company, the Director of the Agricultural Experiment Station and the U. S. Department of Agriculture the north fifteen (15) acres of the east one-half of the northwest quarter of the southwest quarter of section sixteen (16), township seven (7) south, range nine (9) east, S. B. M., were conveyed to the Director of the Agricultural Experiment Station of the University of California, and his successors in office, to be used as a garden for the testing of desert fruits and to revert to the Mecca Land Company should it cease to be occupied or used as an agricultural experiment station.

It has conducted a School of Navigation in conjunction with the United States Shipping Board. Twenty-two men were graduated from the first course; forty-five are now enrolled.

A school for chief storekeepers in the Ordnance Department has been opened. Thirty were qualified at the six-weeks' session just closed. There are now forty-five enrolled in a second course.

A unit of the Reserve Officers Training Corps is being maintained, with 1218 University Cadets enrolled; 47 are serving as officers.

A special seven weeks' Summer Course in Military Training was given under Colonel J. T. Nance. Over 200 were enrolled.

A course in Naval Engineering has been formulated and will be introduced next term for the purpose of training men to qualify as Ensigns in the Navy. In contemplation are also courses in Naval Architecture and Military Engineering.

Special war work for women has been offered in the regular and summer sessions, and in the inter-session from June 18 to August 4. A Institute for Home Service was held in conjunction with the Red Cros from November 12 to December 15, 1917.

A Military Information Office has been maintained since the beginning of the war. It has advised thousands of men, and has already place hundreds of University men in branches where their special equipmen will enable them best to serve the nation.

The Department of Agriculture, in coöperation with the Food Commissioner and the Committee on Resources and Food Supply, has donate the greater part of its energies toward the solution of food problem involved in the war.

Many departments, particularly the Department of Chemistry, have engaged extensively in research on behalf of the national government, to meet war needs. All of the engineering colleges have been active in this sort of work and have freely lent their equipment and the services of their experts to this work. Many members of our faculty occupy important positions on scientific committees of the State and National Councils of Defense. Many of the research problems being dealt with by departments of the University at the request of the War Department are of a confidential nature and the results have not yet been entirely reached. Prominent among the departments that are carrying on such work are: Agriculture, Astronomy, Botany, Chemistry, Economics, Engineering, Geology, Medicine, Psychology, and Zoology.

The University has expended or administered for war purposes from April 6 to October 31, 1917, a total of $160,940.78, of which $29,616.41 was from University funds, $3,256.20 from fees from students, $62,730.20 from State funds, while it also administered $65,335.97 of federal funds for the conduct of the School of Military Aeronautics. These figures do not include the value of University equipment and buildings being used for carrying on this work, nor with the exception of the figures for agriculture ($100,000 estimated total), do they include a statement of the value of the services of the regular teaching and administrative staff of the University who are devoting a considerable part of their time to work in connection with the war. An account of the expenditure of this money giving the segregation of funds will accompany the more detailed report furnished the Regents.

The Medical School has given many of its men to the Medical Corps; it has conducted many tests and physical examinations; it has dealt with research problems; it has been accorded the privilege of enlisting second, third, and fourth year students in the Medical Enlisted Reserve with orders to continue their studies. Notable among the achievements in medicine in the past year is the discovery of tethelin by Professor T. Brailsford Robertson. Experimentation in Europe already shows that the power of this substance to promote growth of tissue will prove of immense value in the work of treating wounds.

The Medical School has furnished the equipment and many of the members of Hospital Unit 30, under Dr. Kilgore. Of the twenty-five physicians, twenty-three are from our Medical School; thirteen of them graduates. There are also ten enlisted men among our medical students. Eight of the sixty-five nurses are from the University Hospital. The University Hospital is training for hospital stewards of base hospitals in units of fifty men each. The Dispensary has, since July 1, conducted 2200 examinations for government service. In addition, many other examinations have been conducted for the State Board of Health, in connection with the selective draft.

The Dental School has aided the War Department in many ways, ably by supplying trained men for the work of the Dental Corps and offering under its clinics to perform free dental services for all men o, because of defects of teeth, might be rejected under the draft.

Altogether, every branch and department of the University has eagerly ponded to the call to service in the common cause. More of our men going every day, and those who remain are fitting themselves better serve the nation. The women, too, are doing their part. Our mobiliz- on has really just begun; but the University knows its responsibility l its power. We have offered ourselves. The nation has called upon We must and shall adequately respond.

lgard Hall Grounds:

On January 8, 1918, it was voted to improve the grounds about Hilgard ll, at a cost of not to exceed $2000, this to include planting, walks, etc.

w Buildings for University Farm:

On January 8, 1918, it was voted to construct a milkhouse and dairy rn at the University Farm, at a cost of not to exceed $1500.

ntract for Kearney Vineyard Raisins:

On January 8, 1918, the Regents approved a contract, dated December , 1917, with the California Associated Raisin Company, for the sale of all e raisins to be produced during the years 1918, 1919, and 1920, at arney Park, Fresno County, California, with option to the buyer to tend this contract to cover the years 1921, 1922, and 1923, provided e option is exercised on or before April 1, 1921.

aves of Absence for Men in Military Training:

On January 8, 1918, it was voted that members of the faculty of the nk of professor, associate professor, and assistant professor, together th such instructors as may be recommended by the President of the iversity, absent from duty for military purposes be given leave of sence until the end of the war without pay, such leave of absence to te from the time of their departure from the University.

ntract for Cadet Uniforms:

On January 8, 1918, the Regents approved a contract, dated December , 1917, with the Hastings Clothing Company, for cadet uniforms for e year ending June 30, 1918.

reement with State Board of Education:

On February 13, 1918, it was reported to the Board that the following reement, dated January 21, 1918, had been entered into between the ate Board of Education and the University of California in regard to e training of vocational teachers of agriculture, trade, and industrial jects:

Division I

Classes for the Training of Teachers, Supervisors, and Directors of Agricultural Subjects

1. The University shall establish and maintain in connection with an under the direct supervision of the School of Education, training class for vocational teachers of agricultural subjects at one or more of th following places: The Kearney Farm in Fresno County, the Citrus Exper ment Station in Riverside County, and the Davis Farm in Yolo County- the number, the places, and dates of establishment of these classes to determined after a survey of the situation has been made by the parti concerned.

2. The University shall place each of the classes for the training o teachers of agricultural subjects in charge of a Director and such othe teachers as are considered necessary, and it shall also provide a Gener Director of the same, who shall be the Chief of the Division of Agricu tural Education at the University. Said General Director shall devot not less than one-third of his time to the direction of these classes, an his salary shall be pro-rated on the basis of relative given service to th University and the State Board of Education. The teaching positio created, the general director, the directors and teachers appointed, th salary schedules and other proposed expenditures shall be agreed upon b the President of the University, the Director of the University Scho of Education and the State Board of Education.

3. Any of the above directors and teachers may be employed for join service in the School of Education and in the College of Agriculture o in a California State Normal School or other California school, in whic case the director or teachers so employed shall also be satisfactory to th Dean of the College of Agriculture, or the president or the principal o the school coöperating in such employment.

4. The class for the training of teachers of agricultural subjects sha be open only to persons of good moral character, of good health, withou physical or other defect which would impair their fitness as teachers o vocational agriculture, and who in addition thereto are one of the following

(*a*) Graduates of agricultural colleges.

(*b*) Persons who have had at least four years of schooling beyond th eighth grade of an elementary school course, at least six years of far experience secured after the age of eighteen, and who give evidence o being familiar with scientific farming.

(*c*) Persons who have had six years of such schooling and at least fou years of such farm experience.

(*d*) Persons who, in the judgment of the School of Education, hav training and experience which are equivalent to any of the above.

5. The normal length of the course for the graduates of colleges o agriculture in the United States that maintain four-year college course beyond a four-year high school course shall be one year, and person other than such graduates shall be placed upon courses the length o which shall be determined by the director and teachers of the local clas concerned.

hool of Military Aeronautics Buildings:

On November 13, 1917, the Regents voted to advance approximately 6,000 for the erection of barracks for the School of Military Aero- utics, and approximately $9500 for additions to the aeronautics labora- ry, reimbursement to be made from receipts of the School of Military eronautics.

athilde Hermann Jackson Bequest:

On November 13, 1917, it was voted to accept $4850 in settlement of e note of G. C. Martin and Alice E. Martin, dated August 18, 1913, said ote having been inherited by the Regents from Mathilde Hermann ackson.

outhern California Summer Session:

On November 13, 1917, it was voted to hold a Summer Session in Los ngeles, in 1918, the cost to be kept within $20,000, reimbursement to be btained from Summer Session fees.

rdnance Bond:

On November 13, 1917, a bond for $66,000 was authorized in favor of he United States in the matter of the issuance of ordnance and ordnance tores.

as Engineering Degree Fund:

At a meeting of the Regents on November 13, 1917, President Wheeler eported the receipt of the following communication from the Pacific oast Gas Association, relating to the disposition of the Gas Engineering egree Fund:

Pacific Coast Gas Association
Report of Committee on Gas Engineering Degree
Twenty-fifth Convention,

Santa Cruz, California, Sept. 18–21, 1917.

Your Committee on Gas Engineering Degree respectfully recommends:

That in view of the large unexpended balance, now in the possession f the University of California, for which there seems at the present time o immediate use, that the University be requested on behalf of this Asso- iation to invest such moneys as it now has in hand and such additional ums as it may receive for the increment of the Gas Engineering Degree und, from any source, and to use the interest derived from such invest- nent, for any purpose associated with the intent of the subscription by hich the fund was raised, as may be mutually agreed upon between the ommittee of this Association in charge of the fund, and the authorities f the University.

It is also recommended that this Association receive the right, through he Committee on Gas Engineering Degree, to direct the principal of the und and such accrued interest as at the time may be unexpended, to be sed for any purpose that its judgment may direct.

That a certified copy of this report when and as adopted be furnishe to the President of the University of California, and that when a acknowledgment is received by the Secretary of this Association, indica ing a compliance by the University with the suggestions herein, that th report be considered as finally adopted.

I hereby certify that the above is a true and correct copy of the recon mendations of the Committee on Gas Engineering Degree adopted at tl Twenty-fifth Annual Convention of the Pacific Coast Gas Association.

(Signed) HENRY BOSTWICK,
Secretary, Pacific Coast Gas Association.

November 10, 1917.

Class of 1917 Fund:

On November 13, 1917, the Regents accepted the Class of 1917 Fun in accordance with the following letter:

October 3, 1917.

The Board of Regents,
University of California,
Berkeley, California.

Gentlemen: It gives me great pleasure to hand you herewith a chec for $2000 which is to be a nucleus of an endowment fund of the Class o 1917.

This fund is placed with you for investment at whatever rate o interest your board decides upon and will be added to from time to tim from various sources. The principal of the fund is to be kept intact unti 1935 and is then to be paid back to the permanent class treasurer. Th interest on the fund is to be paid semi-annually to the Permanent Or ganization Fund of the Class, which will be kept by the Alumni Secretar of the University of California.

If at any time necessity demands, a majority of the Executive Boar of the Class of 1917, consisting of S. S. Barrows, F. W. Stewart, and F. S Moulton, may call upon the Regents to return to the Permanent Organ ization Fund any or all of the principal, which at that time is in thei hands, provided the money is to be used for some University purpose which, in the judgment of the Regents, is a worthy one.

The present plans of the class call for a reunion in 1935, at whic time the principal sum in the hands of the Regents will be added to b popular subscription and the total amount used to erect some fitting an permanent memorial to the Class of 1917.

Yours respectfully,
THE CLASS OF 1917,
Ferris S. Moulton, Treasurer.

Death of Professor W. R. R. Pinger:

At a meeting of the Regents on November 13, 1917, President Wheele reported the death of Dr. W. R. R. Pinger, Assistant Professor of German on October 17, 1917. Dr. Pinger had been a member of the Departmen of German since 1905.

Mess for Aviation School:

On December 11, 1917, the Regents voted to authorize the Comptrolle to conduct a mess for the School of Military Aeronautics.

negie Ruling re War Service:

On December 11 the Finance Committee reported to the Regents that
Executive Committee of the Carnegie Foundation for the Advance-
nt of Teaching took the following action in March, 1917:

> Voted: That professors, associate professors, instructors, or other
> cers of accepted institutions eligible to benefits of the Carnegie Foun-
> ion, who may enlist in the land or naval forces of the state or nation,
> who engage in industrial or other enterprises or activities recognized
> the Foundation as contributory to the success or efficiency of such
> ces, shall have their pension rights kept alive during the continuance
> the present war.

In response to the question whether ‘‘in case of disability or death
ning during time of service to the government, a faculty man who had
eady served long enough to be entitled to a Carnegie disability allow-
ce were he in active service at the time, would be entitled to the
nefits of the Carnegie retiring allowance?’’ President Pritchett has
itten a letter of November 12 to the University saying:

> The resolution of the trustees of the Carnegie Foundation leaves a man
> sent upon military or naval service of the United States in exactly the
> me relation to the Foundation as if he were occupying his professor-
> ip. This continues during the war.

ame for Sutter Street Building:

On December 11, 1917, it was voted to name the new building being
ected on Sutter street the ‘‘Hallidie Building,’’ in memory of the
voted service to the University of Andrew S. Hallidie, a Regent of
e University from 1878 to 1900, and to provide a tablet for the building
cording Regent Hallidie's services to the University.

iversity's Part in the War:

On December 11, 1917, President Wheeler presented the following
port to the Regents:

> On February 13, 1917, I recommended to this body that in view of the
> creasing probability of the United States entering the war against
> rmany and her allies, we should formally offer to the federal govern-
> nt the use of the entire resources of the University of California in
> eting whatever need should arise in prosecuting the war. This recom-
> ndation was approved, and in accordance therewith since April 6, 1917,
> e University has in every possible way devoted itself to the task of
> ding the federal government to win the war. I have the honor to
> port to you some of the things that have been done by the University
> the way of war service during the past six months. I cannot here and
> w tell in detail of the war work that is being conducted all throughout
> e University. A more complete record of this work I am having mailed
> each member of the Board of Regents. Permit me therefore merely
> summarize.

Since April, 1917, the University of California has sent out 2000 m including students, alumni, former students, and some of its abl instructors, to serve in the military and naval forces of the nati Before war was declared, two ambulance units had already been sent France. Since April, 1917, 450 men have been recommended. Most them have been placed.

The University has organized and conducted a School of Milit Aeronautics since May 21, and is now training 500 aviators in an eig weeks' course. Over 250 men have graduated. From now on they will admitted at the rate of 60 a week. Two dormitories (500–600), c leased, one constructed, cost in all $17,500. Instruction buildings c $16,000.

The University has erected three temporary frame buildings, two them devoted to class rooms and laboratories. The first, 60 by 120 fe one story. The second, 80 feet square, two stories. Cost of both, $16,0 The third building constructed by the University to be used as a barrac accommodating 250 men, is 80 by 130 feet; two stories; cost with equ ment, $17,500. In addition, the government has allotted a brick buildi just outside the campus. This is 50 by 100 feet, and also accommoda 250 men.

6. Before graduation all students who have had less than one full ye of successful experience gained in conducting a farm or a farm proj upon a commercial basis shall be required to devote one-half of a ye to practical farm work which shall include for each student one or m farm projects, conducted on a commercially productive basis, and preparation for giving the instruction in farm mechanics as specified Bulletin No. 23, California State Board of Education. All other stude before completing the course of training provided by such classes sh qualify for such instruction in farm mechanics.

7. At least twelve university units of education, or an equivalent bas upon teaching experience, shall be required of each person completing t course. At least four of said twelve units shall consist of practice tea ing in agriculture which shall include the direction of farm project wo as set forth for vocational courses in agriculture, Bulletin No. 23, Ca fornia State Board of Education.

8. The Director of the School of Education shall submit to the Sta Board of Education, for its approval, a complete outline of the courses study proposed for the teacher's training classes and any future mo fications of the same shall also be submitted to the Board for its approv

9. All classes and the instruction therein shall be open to inspecti and supervision by the State Board of Education and its officials.

10. The University shall, upon request, report to the State Board Education the annual outlay for the general director's, directors' a teachers' salaries and other authorized expenses, and in addition there such other information as the Board may desire.

11. Upon requisition from the proper university authority the Sta Board of Education will pay all authorized expenditures for the mai tenance of such special classes; provided, that it will not pay expen tures in an amount in excess of $8928 for classes conducted during t fiscal year 1917–18, $12,500 for classes conducted during the year 1918–1 $16,070 for classes conducted during the year 1919–20, $17,855 for class conducted during the year 1920–21, and for classes conducted thereaft $17,855 annually. All of the above are subject to the limitations of t federal law and future adjustments by the State Board of Education, approved by the Federal Board.

DIVISION II

CLASSES FOR THE TRAINING OF TEACHERS OF TRADE AND INDUSTRIAL SUBJECTS

1. The University shall establish, and for at least a part of the present eal year and thereafter maintain in connection with and under the rect supervision of its School of Education, evening training classes for cational teachers of trade and industrial subjects, and teachers of ntinuation classes in civic and vocational subjects.

2. The University shall place this department in charge of a director d such other teachers as are considered necessary. The teaching sitions created, the directors and teachers appointed, the salary hedules and other proposed expenditures, shall be agreed upon by the esident of the University, the Director of the University School of lucation, and the State Board of Education.

3. All of the University teachers assigned to these evening training asses for vocational teachers of trade and industrial subjects shall be, id the director and supervisors of courses designed to prepare teachers r classes in civic and vocational subjects may be, experienced in-ructing vocational classes of pupils of secondary school grade. In ldition to other duties said teachers shall be made responsible for the actice teaching and the course in education dealing with the content their special subjects and methods of instruction.

4. The University shall coöperate with one or more city boards of lucation for the purpose of providing practice teaching in the city ening schools for the students of these training classes.

5. The classes for the training of teachers of trade and industrial ibjects shall be open only to persons of twenty-four years of age or over, good moral character, of good health, without physical or other defect hich would impair their fitness for the teaching service, who pass aminations in oral and written English composition and in civic and neral information, and who have had at least two years* of experience journeyman workers, or—where this terminology does not apply—its quivalent, in the vocations they are preparing to teach.

6. The number accepted for training as teachers of each of the occu-ations shall be governed by the demand for trained teachers in said cupations, and a minimum uniform standard of academic proficiency all not necessarily be required for candidates preparing to teach dif-rent occupations, but the aim shall be to secure for the service the best aterial that may be had for each occupation.

7. Upon entrance on any one of the courses for the training of teachers industrial and trade subjects the student shall be assigned to at least vo evenings per week of practice teaching as a cadet teacher, under the rection of a teacher of a vocational class in an evening high school, and addition thereto he shall be required to devote at least two evenings r week to theoretical educational work, approximately one-half of hich shall be devoted to establishing the content of the course in the cation and to a study of the methods of its presentation. The re-ainder of the time shall be devoted to a general course in education hich shall include a study of the school system and the place of cational education therein.

8. The course for the training of teachers as instructors of continua-on classes in civic and vocational subjects, as defined in Part II of

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* At least three years of journeyman experience are required by law for a voca-nal certificate.

Bulletin No. 23, California State Board of Education, shall be open onl to persons admitted to the classes for the training of teachers of tra and industrial subjects; to persons who hold California high scho teachers' credentials or certificates; to persons with at least three yea of teaching experience who hold California Normal School diplomas normal school diplomas granted by institutions of equal rank; and t such elementary or secondary school teachers as satisfy the Director the vocational teachers' training classes that they are especially fitte by training and experience for this work and who, in the judgment of th Commissioner of Industrial and Vocational Education, will be able t qualify for a certificate upon completion of the course.

9. Should it become evident to the Director and the Faculty of th Evening Training Courses for Vocational Teachers that any student wh is enrolled therein does not possess the special fitness which will qualif him as a good teacher of the vocation, the Director shall notify sai student of the fact and he shall thereupon withdraw from the trainin course. Should the student upon such presentation fail to withdraw h shall be dismissed by the Director.

10. The Director of the School of Education shall submit to the Stat Board of Education for its approval complete outlines of the course o study proposed for the training classes for vocational teachers of trad and industrial subjects and of continuation classes in civic and vocation subjects; and any future modifications of the same shall also be submitte to the Board for its approval.

11. All classes and the instruction therein shall be open to inspectio and supervision by the State Board of Education and its officials.

12. The director of the training classes for vocational teachers shal not be assigned to any other duties but shall give his entire time to th direction of the work, and he shall be made personally responsible for th recruiting of students from the various trades and industries of the community.

13. It shall be the aim to establish courses for the training of teacher of trade and industrial subjects and teachers of continuation classes i civic and vocational subjects in the order of their importance as evidence by the demand of the public schools.

14. The length of the courses shall for the present be undefined, bu upon a demand for vocational teachers in any given subject the Directo of the classes shall recommend the best prepared persons to the Stat Board of Education for certification as teachers.

15. The University authorities shall, upon request, report to the Stat Board of Education the annual outlay for the directors' and teachers salaries and other authorized expenditures, and in addition thereto suc other information as the Board may desire.

16. Upon requisition from the proper university authority the Stat Board of Education will pay all authorized expenditures for the maintenance of such special classes; provided, that it will not pay expenditure in an amount in excess of $5872 for classes conducted during the fisca year 1917–18, $8220 for classes conducted during the year 1918–19, $10,57 for classes conducted during the year 1919–20, $11,745 for classes conducted during the year 1920–21 and $11,745 annually for classes conducte thereafter; all of the above are subject to the limitations of the federa law and future adjustment by the State Board of Education, as approve by the Federal Board.

17. This plan does not contemplate that funds shall be used to compensate city teachers to whom student teachers are assigned for practic teaching.

tract, Signal Corps, U. S. Army:

On March 12, 1918, the action of the Comptroller was approved in ing signed the following amendment to the contract between the ents and the Signal Corps of the U. S. Army, covering the School of itary Aeronautics:

AGREEMENT, entered into this 8th day of March, 1918, between Major rge B. Hunter, Signal Corps, United States Army, for and in behalf he United States of America, party of the first part, and the University California, in the City of Berkeley, State of California, party of the ond part,

WITNESSETH THAT:

WHEREAS, on June 27, 1917, a contract was entered into between the nal Corps, U. S. Army, for and in behalf of the United States of erica, and the University of California, whereby the University of ifornia (known as the contractor), agreed to provide, properly equip maintain at the City of Berkeley, State of California, a School of litary Aeronautics for giving ground training to officers and enlisted n of the Signal Corps.

NOW THEREFORE, it is agreed by and between the parties hereto, that consideration of the University of California hereby agreeing to an argement of the course of instruction given to officers and enlisted n of the Signal Corps in the School of Military Aeronautics at the iversity of California, Berkeley, California, from a course of eight (8) eks to a course of ten (10) or twelve (12) weeks, as the Chief Signal icer may direct.

It is agreed by and between the parties hereto that Article IV of the ove mentioned contract, dated June 27, 1917, shall be amended by iking out of said contract the following words: ''Provided, that in no e shall the total compensation for each student be more than sixty- e ($65.00) dollars.''

All other articles of the above mentioned contract dated June 27, 7, are hereby affirmed and made a part of this contract.

smissal of Alfred Forke and I. W. D. Hackh:

For conduct inimical to the United States, Alfred Forke, Agassiz Pro- sor of Oriental Languages and Literature, was dismissed from the Uni- sity on March 31, 1918, and I. W. D. Hackh, Assistant in Chemistry, on ril 2, 1918.

struction of Farm Buildings:

On April 9, 1918, the Regents authorized the construction at the Uni- sity Farm of a vegetable storage house and cellar, at a cost of $1300, a lean-to shed at a cost of about $500, and of two four-room bunk ses, at a cost of $575 and $745.50.

signation of Comptroller Merritt Declined:

On April 9, 1918, the following letter from Comptroller Ralph P. rritt, offering his resignation as Comptroller was presented to the ard:

April 9, 1918.

President and Regents of the
University of California.

Gentlemen: On May 1, 1917, you generously granted to me a leave absence of ninety days from my position as Comptroller of the Universi of California.

Of this time, two months were devoted, at the request of the Govern of the State, to the work of draft registration, under the direction of t War Department. On July 1, 1917, you granted me a further leave absence at the suggestion of the Governor and at the request of M Hoover, United States Food Administrator, in order that I might beco an appointee of the President in the work of the Food Administration the capacity of Federal Food Commissioner for California.

At the end of the present month, I shall have been absent from m duties as Comptroller of the University of California for one year, an during that time I have, through your generosity, been paid my full salar

Since leaving active connection with the University, I have served t Federal Government both under the War Department and under the Fo Administration without salary.

Since accepting the original appointment on July 1, the responsibiliti placed upon this office have expanded and, at the present time, we a engaged not only in the original duties placed upon the State Food A ministrator, but our organization has taken over the coördination of t purchase of foodstuffs in California for the allies and the army and nav and, in addition to this, we have within the last two weeks set up a ne organization for the control of the purchasing, milling and distribution all breadstuffs for the States of California, Arizona, and Nevada, an Mr. Hoover has appointed me to serve as chairman of this Zone Committe

These facts are stated in order that you may understand that t duties of the present office are expanding and there seems to be n likelihood in the present crisis of any change.

In view of these circumstances and in all fairness to the Universit of California, to which I am so deeply indebted, I beg to respectfull offer my resignation as Comptroller of the University of California, t take effect May 1, 1918.

I have no intention at the present time of accepting any other wor than the responsibilities placed upon me by the Federal Government, bu I fear that there may be some criticism against the University for continuance of its generosity toward me, and I also would suggest tha there is at all times a likelihood of public reaction against this offic or against the official position which I hold which might make any co nection with the University a burden to that institution.

May I express my deepest gratitude for the innumerable kindness which have been constantly shown me by all of those whom it has bee my honor and privilege to serve.

Very respectfully, (Signed) RALPH P. MERRITT.

The Board adopted the following resolution:

Resolved, That Mr. Merritt's tender of his resignation be declined; tha the Regents appreciate the motives which led to its tender, and that the are glad to have been able to be of assistance to the national interest at this time by lending to the national government the efficient service of their Comptroller, and they desire both that such services be continue and that they be continued as a contribution by the University of Cal fornia, and that it is the sense of the Regents that the leave of absenc granted Mr. Merritt in order that he may attend to his governmen duties be continued indefinitely.

German Taught in Los Angeles Summer Session:

On April 9, 1918, it was voted that German be not included in the t of courses to be given in the 1918 Summer Session in Los Angeles, view of the lack of demand for it and the probable deficiency in funds.

stponement of Opening of University:

On April 9, 1918, the Regents authorized the President of the Univer- y to postpone the opening of the University until the harvest period ould be over, in view of the necessity of agricultural labor.

smissal of Alien Enemies:

On April 9, 1918, the Regents adopted the following resolutions:

Resolved, That the Board of Regents in confirming the action of the xecutive and Finance Committees in summarily dismissing alien enemies om the faculty of the University of California for cause, explicitly presses its approval of that action and confirms it as the sentiment of e entire Board, which Board urgently desires that the University con- nue its activities in aiding the prosecution of the war.

ar Activities:

On April 23 the Regents approved the following recommendations of e committee appointed to consider opportunities for the University to d in the prosecution of the war:

1. That the many and varied war activities of the University be given mediate and vigorous publicity.
2. That the following resolution be adopted :

WHEREAS, the Board of Regents have found it necessary to dismiss embers of the faculty for want of fidelity to the country,

NOW, THEREFORE, the President is hereby advised that it is the sense of e Board that immediately it comes to his notice that any member of e faculty is disloyal, he should be forthwith dismissed, anything in the dget to the contrary notwithstanding.

yalty Required for Degree:

On April 23 the Regents voted that no student be given a degree til he has made a written declaration of his loyalty to the United States the war.

hool of Vocational Training:

On May 14, 1918, the Regents authorized the execution of a contract th the United States Government for the establishment of a School of cational Training, during the summer, for the training of not less than 0 enlisted men in different vocations, at the rate of $1.70 per man per y, including feeding, housing, and instruction.

ater Service at Affiliated Colleges:

On May 14, 1918, the Regents appropriated $650 for the consolidation water services at the Affiliated Colleges.

Contract, Union Oil Company:

On May 14, 1918, a contract was authorized with the Union Oil Co pany for the purchase of fuel oil during the period February 1, 1918, May 31, 1919, at $1.45 per barrel delivered San Francisco and Berkele and $1.33 per barrell f.o.b. tank cars, Oleum, California.

Eldredge Hall:

On May 14, 1918, the Regents voted that Eldredge Hall, one of t buildings deeded to the University by the Hahnemann Medical College, turned over to the Children's Hospital for use in connection with t housing and instruction of nurses, on the understanding that the Children Hospital expend approximately $7500 in improvements to the buildin and that if the University at any time desires to take over the propert it should pay to the Children's Hospital the amount expended for suc improvements less depreciation at the rate of $1000 per annum.

Degree of I. W. D. Hackh Rescinded:

On May 14, 1918, the Regents voted to rescind the degree of Mr. W. D. Hackh which had been granted in December, 1917, since he ha been dismissed from the University faculty for actions inimical to th United States.

Walnut Experiments:

On May 14, 1918, the Regents approved and confirmed the execution contracts with the San Joaquin Fruit Company, covering the use of tract of walnut grove on which the Citrus Experiment Station is makin fertilizer tests, and with the Irvine Company for the cultivation twenty acres of experimental walnuts.

Alien Enemies:

On May 14, 1918, President Wheeler reported to the Board a list male enemy aliens resident in Berkeley and connected with the Unive sity, all of whom he stated had either been dismissed or had not bee reappointed for the year 1918–19.

Loyalty Pledges:

On May 14, 1918, the Regents voted to require a pledge in the followin form of all candidates for degrees:

> (1) As an American citizen I hereby pledge my abiding loyalty the United States of America, and my unqualified devotion to the righ and victory of the cause for which she fights in the present war, and understand that the conferring of my degree is conditioned upon the trut of this statement.
>
> (2) As a citizen or subject of a country, ..., neutral the present war (or a country, ..., with which the Unite States is at war) I hereby pledge my honor that I am in sympathy wit the cause of the United States and that I will give no aid or comfort, sentiment, word, or action, to the enemies of the United States, or of th powers allied with her; and I understand that the conferring of degree is conditioned upon the truth of this statement.

(3) As a citizen or subject of a country, ..., on whose le the United States is engaged in the present conflict, I hereby pledge loyalty and abiding devotion to the right and victory of the cause for ich my country, her allies and associates, are fighting, and I understand at the conferring of my degree is conditioned upon the truth of this atement.

tiring Allowances:

On May 14, 1918, it was reported to the Regents that retiring allowces, beginning July 1, 1918, had been granted by the Carnegie Foundaon for the Advancement of Teaching to Frederick Slate, Professor of ysics, and George C. Edwards, Professor of Mathematics.

ilitary Inspection:

On May 14, 1918, President Wheeler reported to the Regents the ceipt of the following letter from Rear Admiral A. Ross, U. S. N.:

San Francisco, April 18, 1918.

resident Benj. Ide Wheeler.

My Dear Sir: I closed my inspection of the U. of C. activities last ght at 7 at the Ferry Building, and wish to thank your noted University r the patriotic work done in the instruction of the young men who ow their appreciation in a manner most enterprising and gratifying to e. I was assured that it was a great pleasure to teach such zealous and rnest men fitting themselves for the great work of the country. To me is display was the greatest I have seen in California, and it is with reat pleasure that I congratulate you and your officers on what you are ccomplishing.

Will you convey to Dean Leuschner and Dean Putnam my appreciation f their most earnest endeavor, and I assure you that I shall further to e limit any extension that you may desire to make. Thanking you for e great courtesy shown and wishing for you and the University success all that you may undertake, I remain,

Most sincerely,
(Signed) A. Ross, Rear Admiral, U. S. N.

adium:

On June 11, the Regents voted to provide funds for the purchase of dium with a view to establishing a radium center at the University of alifornia Medical School, these funds to be refunded out of the earnings f the radium.

ease of Hog Serum Laboratory:

On June 11, 1918, the execution of a lease from Louis Schaffer was thorized, covering a period of three years, commencing October 1, 1918, f certain property in Oakland to be used as a hog serum laboratory, at total rent of $1800.

ond, Estate of George H. Kraft:

On June 11, 1918, the Regents approved the execution of the following ond in the matter of the estate of George H. Kraft:

Know all men by these presents: That The Regents of the Univerty of California, a corporation, as principal, and Arthur W. Foster and

Rudolph J. Taussig, as sureties, are held and firmly bound unto Union Trust Company of San Francisco, as executors of the last will and testament of Geo. H. Kraft, deceased, in the sum of five hundred ($500) dollars lawful money of the United States of America, to be paid to the said executor, for which payment well and truly to be made we bind ourselves, our and each of our, successors, heirs, executors and administrators, jointly and severally, firmly by these presents;

The condition of the above obligation is such that whereas the Superior Court of the State of California, in and for the County of Alameda, in the matter of the estate of Geo. H. Kraft, deceased, numbered 23,240 on the files of the said Court, did on the 15th day of May, 1918, duly give and make its order of partial distribution directing the payment to the said principal of the legacy of fifty thousand ($50,000) dollars bequeathed to it by the said decedent and requiring the said principal, before receiving the said legacy, to execute and deliver to said Union Trust Company of San Francisco, as executor as aforesaid, a bond in the said sum, conditioned according to law;

NOW, THEREFORE, if the above bounden principal shall well and truly pay, or cause to be paid, whenever required so to do, its proportion of the debts of the said estate, not exceeding the value or amount of its portion of the said estate, to wit, the sum of fifty thousand ($50,000) dollars, so directed to be paid to it by the said order, then this obligation is to be void, otherwise to remain in full force and effect.

IN WITNESS WHEREOF, these presents have been executed this .... day of May, 1918.

Alterations in South Hall and Harmon Gymnasium:

On June 11 it was voted to appropriate $1000 for alterations in South Hall for the Department of Physics, and $650 for alterations in Harmon Gymnasium for the Department of Physical Education for Men.

Dismissal of Professor H. J. Weber:

On June 11, 1918, the Regents voted to dismiss from the faculty H. J. Weber, Associate Professor of German, for conduct inimical to the United States.

Marine Engineering Course:

On June 11, 1918, an arrangement was approved and confirmed by the Regents, with the United States Shipping Board, for a marine engineering course, to be paid for by the Shipping Board at the rate of $600 per month.

Greek Theatre:

On June 11, 1918, the Regents voted to permit the Greek Theatre to be used by any organization for a meeting which will be of benefit to America or her allies, provided that no private person makes any profit from it.

Donation to Base Hospital Unit:

On June 11, 1918, it was reported to the Board that William H. Crocker had forwarded $10,100 to Dr. Alinson Weeks for the use of the University of California Base Hospital Unit No. 30, this sum being the amount of donations collected under permission given by the Regents at their meeting on April 23, 1918.

COMPTROLLER'S REPORT

1917-18

REPORT OF THE COMPTROLLER

February 21, 1919.

The President and Regents
of the University of California.

Gentlemen: I have the honor to submit herewith a financial report of the University of California for the year ending June 30, 1918, which has been approved by your auditors.

This report is made up of a balance sheet showing assets and liabilities and a statement of income and expenditures each supported by schedules giving detailed information. It is hoped that these schedules are practically self-explanatory but for comparative purposes and to bring out certain important points, the following statement is submitted:

Assets and Liabilities.

The balance sheet shows assets to the value of $20,725,193.94. The largest item is real estate and improvements. Items "A," "B," "C," and "M," of the balance sheet are shown in further detail in the schedules following. The remaining items were not considered of sufficient general interest to warrant printing the schedules which support them.

The notes receivable of the University amount to $554,054.47 and represent mortgage loans except for about $5000 loaned to students from various student-loan funds.

There is an increase in the real estate held as "investments" of $394,215.81, over the amount shown in the report for the year ending June 30, 1917. This is chiefly due to expenditures on the completion of the Hallidie Building in San Francisco, a splendid office and store building which is now providing income for the University. There are compensating reductions in the amount of stocks and bonds, although Liberty Bonds to the extent of $50,000 were purchased during the year.

On the liability side of the balance sheet the University has but one real liability, ''Sundry Creditors.'' The remaining ite might more properly be designated as ''surplus'' since they, i reality, show the net worth of the University.

The principal item of these is the surplus invested in ''fix assets,'' $14,321,287.92. This amount represents the book val of the lands, buildings, and equipment of the University. T amount of cash held by the University in trust for endowmen, loan funds, and donation accounts, is shown in separate ite since these amounts are available only for the purposes for whi they were given to the University.

Income and Expenditures.

The income of the University of California is received fr the following sources: The United States Government, the Sta of California, gifts, endowments, receipts from sales of materi and for services rendered, and fees of students. This latter ite covers only the expenses for laboratory material, supplies, et of individual students and does not offset, in any way, the c of education, research or administration in the University. T income from the sources noted above is as follows: United Stat Government, $119,433.21, State of California, $2,225,419.3 students' fees, $280,215.47, sales of materials and services re dered, $466,987.69, endowments, $226,316.37, gifts, $240,460.5

The income from the United States is received from t following funds: The Adams, Hatch, Smith-Lever and Morr College Aid. The Hatch and Adams funds were created by Ac of Congress dated March 2, 1881, and March 16, 1906, respe tively, and each provides $15,000 per year, payable quarterl The purpose of the Hatch Fund is to provide for the publicati of useful and practical information on agriculture; the purpo of the Adams fund is to pay for necessary expenses of origin research and experimental work in agriculture. The Smit Lever Fund was created by an Act of Congress providing th the United States Government and the governments of the var ous states might contribute, share and share alike, certain su of money for agricultural college work. The Morrill Colle Aid Fund was also created by an Act of Congress in August 3 1890, the money to be used for instruction and facilities agriculture, mechanical arts, natural and physical sciences, the English language and economic sciences.

The receipts from State appropriations represent money received and receivable by the University Treasurer from the State Treasurer on account of appropriations made by the Legislature in 1917. It will be noticed that there is an appropriation under this heading to the Smith-Lever Fund matching the appropriation from the United States Government.

The receipts from student fees and deposits, the purposes of which have been explained previously, were about $12,000 less than for the previous year. This was due, in a large measure, to the withdrawal of students to enter the service of their country.

The receipts from clinics and from departmental sales represent payments for services rendered by University Departments, r income from the sale of products manufactured or produced y the University in the course of its experimental and instructional work. It will be noted that the greater part of such eceipts arise from the operations of the College of Agriculture. This should be taken account of when considering the cost of perating this department; for instance, the disbursements by he Dairy Department for the year are shown as $16,636.16, gainst which there is an offset, in receipts, of $16,603.44.

The income from investments was slightly larger than for the revious year, due primarily to a complete investment of the funds f the University, the interest rate remaining practically the same.

The endowment funds of the University increased to 5,490,430.85 during the year. The most notable additions were he Isaias W. Helman Scholarship Fund and the Herbert Kraft Scholarship Fund of $50,000 each and the Horace Davis Library Fund of $10,000. The net increase for the year was reduced o $34,015.53 due mainly to the fact that the Doe Library Fund, hich formerly appeared under endowments, was expended on the ompletion of the University Library and now appears among he assets of the University. Gifts were received during the year or current use amounting to $75,284.75.

The cost of administration in the University and the oper-tion and maintenance of the grounds and buildings was $480,-97.41, an increase of $60,785.25 over the preceding year. This increase was due to the general rise in the wages of labor and th increased costs incident to the completion of the three grea buildings, the University Library, Gilman Hall and Hilgard Hal

Additions to buildings and improvements of university pro erty totaling $580,654.05 were made during the current yea Notable among the items included in this total are the followin

Citrus Experiment Station, Riverside, buildings and improvements	$16,893.26
University Farm, Davis, buildings	23,091.72
Wilmerding School, new buildings	5,898.08
Lick Observatory, electric light and power plant	2,744.03
Oil-surfacing campus roads	6,769.86
Filter plant in Strawberry Canyon	5,844.43
Steam heating in Campus buildings	7,032.15

The foregoing items are exclusive of the large sums whic were spent for the completion of Hilgard Hall, Gilman Hall, th University Library and the University Hospital. Equipme was added during the year costing $168,963.56.

Expenditures for Education and Research totaled $2,195 432.83, an increase of $196,936.26 over the previous yea Disbursements for scholarships, prizes and loans amounted t $39,120.89 during the year and were not nearly sufficient to mee the demands of the student body.

The war activities of the University will, no doubt, be di cussed more fully in the reports of the President and the variou departments, but the records of this department contribut certain evidence by showing that $238,618.22 was expended b the University directly on war activities including the Scho of Military Aeronautics. This does not include expenditures b departments on war work along their own lines. Some of th sum will be returned to the University from the United State Government and other sources, but the expenditure of it ha been entrusted to the University and has, I believe, been cha acterized by economy and efficiency.

Respectfully submitted,

R. G. Sproul,
Assistant Comptroller.

AUDITOR'S CERTIFICATE

The Finance Committee of the

Board of Regents of the University of California.

DEAR SIRS: The books and accounts of the University of California ave been audited for the year ended June 30, 1918, and we certify that the alance Sheet of June 30, 1918, the statement of Income and Expenditures or the year ended June 30, 1918, and the accompanying schedules are in ccordance therewith, and, in our opinion, correctly exhibit the financial ondition of the University.

The investment securities have all been examined, and agree with the ecords.

The income from the Trust Funds has been expended in accordance with he specified conditions of the various trusts.

McLAREN, GOODE & Co.,
Certified Public Accountants.

SAN FRANCISCO, CALIFORNIA,
February 12, 1919.

BALANCE SHEE

ASSETS

Schedules			
	Real Estate and Improvements:		
"A"	Real Estate in Berkeley	$1,545,822.44	
"B"	Buildings and Improvements in Berkeley	5,748,232.56	
"C"	Real Estate and Improvements not in Berkeley	4,139,019.91	
			$11,433,074
	Equipment:		
	General	$2,691,863.87	
	Bancroft Library	250,005.00	
			2,941,868
	Investments:		
	Notes Receivable	$ 554,054.47	
	Bonds	1,327,371.00	
	Stocks	169,053.00	
	Real Estate held as Investments	2,723,001.71	
	Balance on Contract for sale of Real Estate	1,300.00	
	Expenditures under G. W. Hooper Endowment Fund	552,104.21	
			5,326,884
	Suspense Account—Montgomery Avenue Bonds		21,999
	Departmental and other expenditures carried forward		474,137
	Amounts due from State of California under various appropriations		263,928
	Sundry Debtors		254,082
	Cash on hand		9,217
			$20,725,193

JUNE 30, 1918

LIABILITIES

Schedules		
	University of California, surplus invested in Fixed Assets	$14,321,287.92
"M"	Endowment Funds	5,490,430.85
	Gains in Endowment Pool Investments	2,186.84
	Fund Income Accounts	44,720.12
	Donation Accounts—Unexpended Balances	76,110.29
	Balances on hand to be used for specific purposes	155,378.45
	Sundry Creditors	519,051.81
	Permanent Building Fund	7,317.30
	Revenue Account Surplus	108,710.36
		$20,725,193.94

[Schedule ''A'']

REAL ESTATE IN BERKELEY

University Campus site	$1,000,000.
Hearst Hall and Hearst Cottage site	7,000.
Hillegas Tract site	194,991.
Palmer House site	17,500.
Barrow Street property	63,450.
Sylvan Way and College Avenue buildings and lands	31,924.
Sylvan Way property	15,395.
Telegraph Avenue and Allston Way	47,105.
Watershed lands	168,456.
	$1,545,822.

[Schedule "B"]

BUILDINGS AND IMPROVEMENTS IN BERKELEY

Acid House	$480.00
Aeronautics Buildings	60,150.24
Agriculture Building—Budd Hall	7,200.00
Agriculture, Forestry Division, portable house	1,237.76
Agriculture Hall	212,883.85
Anatomical Laboratory	8,900.00
Architectural Building	23,377.53
Bacon Library Building	60,515.74
Bacteriological Laboratory	480.00
Barn	2,300.00
Boalt Hall of Law	159,287.61
Botany Building	5,600.00
California Field Bleachers	20,000.00
California Hall Building	275,164.73
Campanile	214,854.67
Cement sidewalks	596.25
Chemistry Addition No. 2	28,648.75
Chemistry Auditorium	36,314.67
Chemistry Building	81,000.00
Chemistry Building—First Wing (Gilman Hall)	197,178.77
Chemistry Storehouse	10,426.03
Civil Engineering Hall	36,750.30
Civil Engineering Laboratory	2,400.00
Civil Engineering Testing Laboratory	9,366.08
Concrete Bridge near Faculty Club	1,387.92
Concrete Bridge near Football Statue	3,384.33
Concrete Bridge at Sather Gate	10,922.86
Conservatory Building	10,800.00
Dairy Barn Building	2,400.00
Domestic Science Building	16,481.70
Drawing Building	19,354.18
Drinking Fountain	619.10
East Hall	18,000.00
Entomological Laboratory	2,569.99
Faculty Club Building	30,000.00
Fertilizer Control Laboratory	26,385.72
Filter Plant—Strawberry Canyon	5,804.43
Girton Hall	4,032.34
Carried forward	$1,607,255.55

[**Schedule ''B''**—*Continued*]

Forward		$1,607,255.
Greek Theatre Building		45,000.
Handball Courts		666.
Harmon Gymnasium Building		50,181.
Hearst Hall		59,398.
Hearst Memorial Mining Building		644,400.
Hilgard Hall		365,078.
Hygiene and Pathology Building		39,450.
Landscape gardening and Campus improvements		3,118.
Manure Pit—Dairy		1,031.
Mechanics Building		61,025.
Milk House—Dairy		4,160.
Mill (for Carpenters' Shop)		1,500.
Mining Building Fountain and Circle		15,887.
John Mitchell Monument		358.
Museum Building		3,667.
New permanent roads		78,914.
North Hall Building		2,000.
Nursery and Propagation House		1,500.
Painters' Shop		2,000.
Philosophy Building		8,000.
Plant Houses		700.
Plumbing Shop		1,200.
Platform Scales		350.
Power, Light, and Heat Plant:		
Power House—building and machinery	$153,497.56	
Heating System	53,721.24	
Electric Construction on Campus	14,820.81	
		222,039.6
President's House		113,868.3
Printing Office		21,441.7
Rifle Range		501.9
Running Track		60,000.0
Sather Esplanade		40,428.6
Sather Gateway		40,118.7
Senior Hall		5,915.0
Shooting Gallery		50.0
South Hall Addition		5,681.6
South Hall		129,578.7
Rudolph Spreckels Physiological Laboratory		25,000.0
Carried forward		$3,661,470.2

[**Schedule ''B''**—*Continued*]

Forward	$3,661,470.26
Storage Bins	1,000.00
Storehouse	10,280.53
Strawberry Cañon Weir	569.80
Students' Infirmary and Annex	29,073.09
Students' Observatory	8,500.00
Sundial	350.00
Superintendent's Office	1,200.00
Surfacing of roads	6,769.86
Swimming Tank	17,200.00
Tennis Courts	22,115.24
Tool House—Botany Garden	282.90
Trunk Sewer	6,356.10
Viticultural Laboratory	400.00
Museum of Vertebrate Zoology	15,094.31
University Library	1,235,370.70
Benjamin Ide Wheeler Hall	709,056.76
Women's Athletic Field	2,297.67
Women's Swimming Pool	12,445.34
Dwellings Rented—University Cottages	8,400.00
	$5,748,232.56

[Schedule "C"]

REAL ESTATE AND IMPROVEMENTS NOT IN BERKELEY

Affiliated Colleges, San Francisco			$405,707.74
Dentistry Building			29,940.98
University Hospital Building			671,353.63
San Francisco Institute of Art			235,150.00
Wilmerding School:			
New buildings		$70,151.71	
Old buildings		24,906.46	
Real estate		62,621.06	
			157,679.23
Lick Observatory, Land and Buildings:			
Land and buildings		$387,000.00	
Barn		1,254.95	
Dormitory and cottages		55,169.08	
Electric light and power plant		14,350.26	
Tank		2,701.00	
Vault		19,834.70	
Lands:			
Cook Tract	$960.00		
Duckworth Tract	316.42		
Hartzoke Tract	262.73		
Holden Tract	511.25		
		2,050.40	
			482,360.39
Pacific Grove—Real estate of Herzstein Seaside Laboratory			2,500.00
University Farm, Davis—Land and buildings			556,938.65
Buildings in East Oakland—Hog Serum Plant			8,695.92
Southern California Pathological Laboratory:			
Buildings and land at Riverside		$224,012.16	
Buildings at Whittier		12,821.31	
			236,833.47
Imperial Valley—Buildings at Meloland			3,021.53
Kearney Estate, Fresno			1,000,000.00
Los Angeles Medical Department:			
Land, buildings and equipment		$100,000.00	
Hospital buildings		24,999.70	
			124,999.70
Scripps Institution:			
Buildings at La Jolla		$101,655.36	
Land at La Jolla		90,000.00	
			191,655.36
Other real estate:			
Congressional lands		$10,568.92	
Public building lands		800.00	
Potrero Avenue lots		10,364.39	
Tulare County real estate		10,450.00	
			32,183.31
			$4,139,019.91

Schedule ''M'']

ENDOWMENT FUNDS

lumnae of Y.W.C.A. of University of California Fund	$600.00
lumni Association Life Membership Fund	4,230.54
lumni Hall Fund	12,424.98
lumnus Book Fund	5,372.76
ssociated Women Students Fund	1,161.10
hilo Sherman Bennett Prize Fund	675.57
oseph Bonnheim Scholarship Endowment Fund	70.000.00
lass of 1874 Library Fund	52.91
lass of 1881 Loan Fund	1,271.97
lass of 1886 Loan Fund	5,895.82
lass of 1887 Library Fund	440.00
lass of 1895 Loan Fund	800.88
lass of 1897 Library Fund	105.08
lass of 1897 Loan Fund	1,243.91
lass of 1898 Loan Fund	259.09
lass of 1900 Library Fund	628.50
lass of 1902 Library Fund	125.00
lass of 1903 Library Fund	1,327.33
lass of 1906 Fund	300.00
lass of 1907 Permanent Endowment Fund—Books	500.00
ass of 1907 Permanent Endowment Fund—Class	150.00
lass of 1908 Fund	205.31
lass of 1909 Endowment Fund	600.00
lass of 1909 Loan Fund	1,149.73
lass of 1910 Endowment Fund	1,350.00
lass of 1911 Class Fund	1,000.00
ass of 1911 Loan Fund	758.72
ass of 1912 Fund	1,900.00
ass of 1913 Fund	1,190.00
ass of 1914 Fund	1,275.00
ass of 1915 Fund	1,000.00
ass of 1916 Fund	900.00
ass of 1917 Fund	2,000.00
ass of Eighty-five Fund	1,068.17
lith Claypole Memorial Research Fund	10,873.67
Chas. Cole Scholarship Fund	2,806.45
ierese F. Colin European Fellowship Fund	10,761.94
ierese F. Colin European Fellowship Fund No. 2	1,171.89
nsolidated Perpetual Endowment Fund	992,217.27
nily Chamberlain Cook Prize Fund	1,194.99
race Davis Library Fund	10,000.00
. R. Davis Scholarship Fund	11,000.00
A. Denicke Library Fund	2,000.00
A. Denicke Loan Fund	7,013.60
ntal Endowment Fund	6,749.03
e Library Fund	1.00
Carried forward	$1,177,752.21

[**Schedule ''M''**—*Continued*]

Forward	$1,177,752
F. W. Dohrmann Memorial Loan Fund	5,766
Dolbeer Scholarship Fund	17,283
Helen Du Bois Endowment Fund	5,016.
Federal Endowment Fund	732,485
Cora Jane Flood Endowment Fund	377,549
Dr. C. W. and Mrs. Sarah E. Fox Memorial Fund	100,000
James M. Goewey Scholarship Fund	16,415
Grubstake W. Loan Fund	483
Hamerslag Loan Fund	6,000
Phoebe A. Hearst Fountain Fund	207
Isaias W. Hellman Scholarship Fund	50,000
Hesse Memorial Scholarship Fund	3,800
Hilgard Fund	32,500
Chas. M. Hitchcock Endowment Fund	10,000
George Williams Hooper Endowment Fund	1,000,000
Cornelius B. Houghton Scholarship Fund	3,000
Howison Foundation Fund	75,000
Samuel C. Irving Prize Fund	500
Albert Sidney Johnston Memorial Scholarship Fund	3,500
Carrie M. Jones Scholarship Fund	100,000
Jucksch Endowment Fund	600
Martin Kellogg Fellowship Endowment Fund	20,000
William Watt Kerr Memorial Fund	7,000
Herbert Kraft Scholarship Fund	50,000
Leona Lebus Endowment Fund	4,000
Le Conte Memorial Fellowship Fund	10,400
Lick Observatory Fund	90,018
Loan Fund No. 2	200
Loan Fund No. 3	102
John W. Mackay, Jr., Endowment Fund	100,000
Massachusetts Relief Fund Endowment	100,000
Medal Loan Fund	360
Memorial Gift Fund of the Class of 1916	1,514
Men's Dormitory Fund	528
Eugene Meyer, Jr., Library Endowment Fund	2,000
D. O. Mills Endowment Fund	170,553
Mining Students' Loan Fund	5,398
Nalanda Loan Fund	50
Napa Seminary Loan Fund	831
Bernard Nathan Scholarship Fund	5,000
Oriental Institute Endowment Fund	4,959
Paget Scholarship Fund	3,009
Whitney Palache Endowment Fund for Hospital	10,000
Frank M. Pixley Scholarship Fund	3,563
Prytanean Fund for Students' Union	396
Prytanean Hospital Fund	238
Prytanean Fund for Women's Dormitory	1,248
Michael Reese Library Fund	50,000
Richardson Latin Translation Prize Fund	1,600
Carried forward	$4,360,832

[**Schedule ''M''**—*Continued*]

Forward	$4,360,832.84
Herman Royer Endowment Fund	5,261.99
San Francisco Girls' Union Scholarship Fund	5,000.00
Sheffield Sanborn Scholarship Fund	15,000.00
San Joaquin Women's Clubs Loan Fund	142.81
Jane K. Sather Campanile Fund (unexpended balance)	10,145.33
Jane K. Sather Chair Fund	105,661.29
Jane K. Sather Classical Chair Fund	121,221.72
Jane K. Sather Historical Library Fund	12,461.68
Jane K. Sather Law Library Fund	21,543.35
Jane K. Sather Library Fund	10,000.00
Jane K. Sather Fund awaiting distribution	48,051.45
Snell Seminary Memorial Loan Fund	313.61
Special Senior Class Loan Fund	1,183.45
Horatio Stebbins Scholarship Fund	4,000.00
Students' Coöperative Society Fund	11,914.68
Summer Session Endowment Fund	6,000.00
Berthan Henicke Taussig Memorial Scholarship Fund	10,000.00
Willard D. Thompson Memorial Fund	55,734.98
Edward Tompkins Endowment Fund	106,829.09
University Endowment Fund	70,738.30
University Hospital Endowment Fund	649.68
University Hospital Endowment Fund (San Francisco Maternity)	10,000.00
University Medal Fund	3,896.00
Veltin Endowment Fund	1,000.00
Walcott Loan Fund	305.05
F. J. Walton Memorial Loan Fund	8,186.79
Mary J. Watson, M.D., Fund for Homeopathic Instruction	1,250.00
Barbara Weinstock Lectureship Fund	6,850.00
Whiting Fund	25,000.00
J. Clute Wilmerding Endowment Fund	441,799.49
Women's Dormitory Fund	2,805.19
Xi Psi Phi Loan Fund	152.08
Y.W.C.A. Endowment Fund	6,500.00
	$5,490,430.85

INCOME

From July 1, 1917, to June 30, 1918

Schedules			
No. 2	United States	$119,433.21	
No. 3	State appropriations	2,225,419.33	
No. 4	Student fees	280,215.47	
No. 5	Clinics of Hospitals and Infirmary	154,661.88	
No. 6	Departmental sales and receipts	272,325.81	
No. 7	Income from investments	226,316.37	
No. 8	Gifts:		
	For current use	75,284.75	
	For endowments	122,175.77	
	For University Hospital Building and equipment	43,000.00	
No. 8*a*	Income for war activities	174,154.21	
	Kearney Vineyard income	40,000.00	
	Total income		$3,732,986.80

EXPENDITURES

FROM JULY 1, 1917, TO JUNE 30, 1918

hedules			
o. 9	Administration and operation	$480,597.41	
o. 10	Buildings and improvements	580,654.05	
o. 11	Education and research	2,195,432.83	
o. 12	Disbursements from class funds, scholarships, fellowships and prizes	39,120.89	
o. 13	Departmental sales, etc., expenditures	290,007.03	
o. 13*a*	Expenditures in connection with war activities	238,618.22	
	Interest paid to endowment income, etc.	4,891.38	
	Transfer from Permanent Building Fund to equalize income from Berkeley real estate	5,035.28	
. 14	Addition to endowment funds	34,015.53	
			$3,868,372.62
. 1	Expenditures prior to June 30, 1917, brought forward		199,027.19
. 15	Income prior to June 30, 1918, carried forward		121,766.17
			$4,189,165.98
. 15	*Less* Expenditures prior to June 30, 1918		542,509.98
			$3,646,656.00
	Surplus for the year		86,330.80
			$3,732,986.80

[Schedule No. 1]

INCOME AND EXPENDITURES PRIOR TO JUNE 30, 1917, CARRIED FORWARD

Income		
Agricultural Department sales	$10,194.61	
Fund interest accounts	35,837.93	
Scholarships and prizes	1,673.05	
Donations	31,774.37	
Miscellaneous	78,440.45	
Jane K. Sather Fund for Campanile	15,137.38	
		$173,057.
Expenditures		
Construction	$57,235.42	
Hooper Foundation Research Expenses	128,479.77	
State Appropriation Suspense Account	89,107.50	
University Hospital Building Fund	97,262.29	
		$372,084.
Net balance (expenditures)		$199,027.

Schedule No. 2]

INCOME FROM UNITED STATES

dams Fund	$15,000.00
atch Fund	15,000.00
mith Lever Fund	39,433.21
orrill College Aid Fund	50,000.00
	$119,433.21

[Schedule No. 3]

STATE APPROPRIATIONS

State University Fund:		
For general purposes	$1,093,019.51	
For Permanent Building Fund	46,100.00	
For scholarships	3,500.00	
		$1,142,619.5
General support		199,999.9
University Building Bonds		205,864.1
Agriculture		415,398.7
Agriculture—Deficiency, 1915–16 and 1916–17		89,107.3
Insecticide and fungicide control		5,000.0
Scripps Institution for Biological Research		12,499.9
Citrus Experiment Station, building and lands		21,627.1
University Farm buildings		18,869.2
University Extension		35,000.0
Smith Lever Fund—State		29,433.2
Medicine		49,999.9
		$2,225,419.3

Schedule No. 4]

STUDENTS' FEES AND DEPOSITS

griculture	$877.91
natomy	315.00
stronomy	570.40
iochemistry	100.65
otany	1,210.10
hanging courses	2,314.50
hemistry	16,667.91
ivil Engineering	2,365.73
elayed registration	1,560.00
entistry	27,602.58
entistry—Special Account	1,208.70
iplomas	5.00
rawing	66.00
ymnasium fees	22,012.15
ymnasium fines	188.80
ymnasium suits, aero	60.55
istory	1,206.30
ousehold Economics	697.45
ygiene	176.95
firmary fees	31,475.70
ey rental	1,000.00
w Library fees	1,762.50
brary	55.00
echanics	1,382.60
edicine	20,798.70
edical appointemnt fees	60.00
ineralogy and Geology	249.25
ining and Metallurgy	440.95
n-resident	6,565.00
thology	1,769.06
ysical appointment	51.50
ysics	4,924.50
ysiology	983.85
ecial examinations	1,166.00
nography and Typewriting	1,063.09
ology	1,588.05
mmer Session fees	62,131.58
s Angeles Medical Department	3,735.00
iversity Extension	52,231.41
iversity Extension—Dentistry	19.50
iversity Extension—Los Angeles	7,555.55
	$280,215.47

[Schedule No. 5]

CLINICS OF HOSPITALS AND INFIRMARY

University Hospital receipts	$115,509.
Medical Department, Los Angeles	4,959.
Students' Infirmary	14,893.
Dentistry Department, San Francisco	19,298.
	$154,661.

Schedule No. 6]

DEPARTMENTAL SALES, ETC., RECEIPTS

Agricultural:		
Agriculture—Director's	$306.89	
Citrus Sales	4,458.95	
Dairy	16,603.44	
Dairy Certification, Alameda	1,714.81	
Dairy Certification, San Francisco	2,183.14	
Fertilizer Control	10,004.20	
Floriculture	368.58	
Forestry	60.00	
Hog Cholera Serum	29,535.71	
Imperial	1,282.87	
Insecticide and Fungicide Registrations	6.00	
Kearney Experiment Station	467.78	
Nutrition	7.34	
Official Advanced Registry Tests	13,215.18	
Soil Chemistry	250.00	
Soil Survey	293.72	
University Farm Income	143,057.74	
Veterinary	4,317.32	
Viticulture	826.65	
		$228,960.32
arious:		
Academy of Pacific Coast History	42.77	
Campanile maintenance receipts	3,342.60	
Intersession income	15.00	
Library exchange	212.35	
Los Angeles Medical Department, sale of equipment	70.00	
Music and Drama	6,653.53	
Refund on mechanical equipment	10,749.00	
Sale of animals from Rabbitry	346.81	
Sale of "A Brief Account of Lick Observatory"	91.80	
Sale of Keeler Volume VIII	9.76	
Sale of Lick Observatory publications	4.76	
Sale of publications	2,161.69	
Sale of syllabi	2,101.04	
Sale of Tebtunis Papyri	24.05	
Carried forward	$25,825.16	$228,960.32

[**Schedule No. 6**—*Continued*]

Forward	$25,825.16	$228,960.3
Sale of "Zoe"	27.46	
Scripps Institution, miscellaneous receipts	5,204.06	
Library fines	718.25	
Sale of junk	90.21	
Sale of equipment, chairs, etc.	680.45	
Refund on adding machine	30.00	
Interest on daily balances	1,855.46	
Interest on University Hospital Building Fund	3,480.36	
Printing Office profit	3,272.90	
Interest on Students' Infirmary notes	684.56	
Federal Council of Defense	43.24	
Rents of cottages and lands	1,453.38	
		43,365.4
		$272,325.8

Schedule . 7]

INCOME FROM INVESTMENTS

ortgage interest	$38,692.29
ond interest	72,282.43
ividends on stocks	14,602.00
ents from investment property	64,301.51
nterest on Hooper Fund expenditures	25,988.44
nterest on moneys under-invested	4,891.38
ransfer from Permanent Building Fund to equalize income from Berkeley real estate	5,035.28
nterest from student notes	523.04
	$226,316.37

[Schedule No. 8]

GIFTS

For Current Use:

R. J. Taussig, Bryce Historical Essay Prize	$100.00
Mrs. Phoebe A. Hearst, Scholarships	2,400.00
Mrs. Phoebe A. Hearst, Anthropology	1,680.00
Mrs. Phoebe A. Hearst, Anthropology, Swedish dolls	120.00
Mrs. Phoebe A. Hearst, Anthropolgy, cases	508.85
Mrs. Phoebe A. Hearst, Architecture	1,000.00
Alumni of Medical School, William Watt Kerr Scholarship	380.00
Native Sons of the Golden West, Fellowship	2,250.00
Presbyterian Church, Scholarship	150.00
San Jose High School, Scholarship	125.00
Levi Strauss, Scholarship	3,500.00
Swedish American Patriotic League, Scholarship	125.00
W. H. Crocker, Lick Observatory, Eclipse Expedition, June 8, 1918	2,500.00
W. H. Crocker, Lick Observatory, Mills Expedition	2,000.00
Mrs. E. W. Crocker, Lick Observatory, Mills Expedition	1,000.00
A. B. Spreckels, Lick Observatory, Mills Expedition	1,000.00
F. W. Bradley, Lick Observatory, Mills Expedition	500.00
G. H. Blanding, Lick Observatory, Mills Expedition	1,000.00
Ogden Mills, Lick Observatory, Mills Expedition	1,500.00
Geo. B. Douglas, Lick Observatory, Mills Expedition	1,000.00
Mrs. F. Bradley, Lick Observatory, Mills Expedition	500.00
Miss A. H. Alexander, Museum of Vertebrate Zoology	6,235.00
Carnegie Foundation, for Advancement of Teaching	20,289.90
California State Dental Association, Dental Department	300.00
Carried forward	$50,163.75

[**Schedule No. 8**—*Continued*]

Forward	$50,163.75	
Per H. G. Chapel, Dental Department, grinding machine	175.00	
E. L. Doheny, for assistant to Professor Bolton	300.00	
Per T. B. Walker, Drawing Department, for lantern slides	100.00	
Per J. E. Howard, lectures	75.00	
Pacific Coast Gas Association, course in Gas Engineering	4,415.00	
A Friend, Palaeontology	2,400.00	
Various donors, for salary of W. R. R. Pinger	1,553.00	
Miss Ellen B. Scripps, Institution for Biological Research	11,700.00	
E. W. Scripps, Institution for Biological Research	1,500.00	
Association for International Conciliation, Summer Session, 1918	500.00	
Patients, University Hospital	3.00	
Mrs. E. A. Drexler, University Hospital	2,400.00	
		$75,284.75
For Additions to Funds:		
Class of 1916, Class of 1916 Fund	$1,000.00	
Class of 1917, Class of 1917 Fund	2,000.00	
Class of 1885, Class of '85 Fund	1,068.17	
Mary T. Bruce, Edith Claypole Memorial Research Fund	100.00	
Estate of Horace Davis, Horace Davis Library Fund	10,000.00	
Mrs. Phoebe A. Hearst, Fountain Fund	207.60	
Persis Coleman, William Watt Kerr Memorial Fund	2,500.00	
Janet D. Coleman, William Watt Kerr Memorial Fund	2,500.00	
Isaias W. Hellman, Isaias W. Hellman Scholarship Fund	50,000.00	
Geo. H. Kraft, Herbert Kraft Scholarship Fund	50,000.00	
F. W. Bradley, Mining Students' Loan Fund	1,000.00	
K. K. Guha, Nalanda Loan Fund	50.00	
Dr. J. W. Ward, Mary J. Watson, M.D., Fund for Homeopathic Instruction	1,250.00	
Y. W. C. A., Y. W. C. A. Endowment Fund	500.00	
		122,175.77
Carried forward		$197,460.52

[**Schedule No. 8**—*Continued*]

Forward		$197,460.
For University Hospital Building and Equipment:		
James Irvine	$5,000.00	
Delia Moffitt	15,000.00	
J. K. Moffitt	10,000.00	
F. W. Bradley	5,000.00	
W. M. Alexander	2,000.00	
C. W. Merrill	1,000.00	
Alex. Morrison	5,000.00	
		43,000.
		$240,460.

[Schedule No. 8A]

INCOME FOR WAR ACTIVITIES

From United States for Aeronautics	$141,416.79
From United States for Aviation Conference	701.40
State Appropriations for Chemistry, Petroleum and Scientific Research	21,543.77
Students' Deposits, Naval Architecture	256.25
Students' Deposits, Ordnance Course	76.00
Students' Deposits, Radio Communication	60.00
Donation for University Base Hospital in France	10,100.00
	$174,154.21

[Schedule No. 9]

ADMINISTRATION, MAINTENANCE AND OPERATION

Administration—Assistance	$27,377.74	
Administration—Printing	15,038.55	
Advisers—Women	276.00	
Affiliated Colleges—Repairs	813.87	
Affiliated Colleges—Site	355.77	
Affiliated Colleges—Watchman	1,994.90	
Auditing	2,573.80	
Comptroller's Office—Assistance	37,979.07	
Entertainment—Dean of Women	21.00	
Examination of schools	2,157.89	
Expense	13,125.83	
Fuel	1,477.90	
Heating and lighting	67,683.41	
Janitors	55,709.45	
Postage	6,166.83	
President's Contingent	3,000.00	
Publications	36,921.82	
Repairs	18,223.40	
Salaries	54,181.97	
Site improvement	24,447.86	
Stationery	2,776.28	
Storehouse	193.37	
Telephone, telegraph and express	7,580.53	
Traveling expenses	1,684.97	
Water	11,957.69	
Interest on overdraft	4,781.84	
Cash—overs and shorts	1.14	
State Compensation Insurance	10,643.66	
Retiring allowances	851.78	
Miscellaneous Expenditures:		$409,998.3
Semicentennial Celebration	$4,474.13	
Alumni Association	3,878.74	
Students' Infirmary	40,596.95	
Students' Gymnasium	15,975.44	
Gymnasium suits—Aeronautics	745.91	
Campanile Maintenance	1,912.97	
State Fish and Game Commission	199.92	
Bad accounts written off	115.03	
Interest on notes to Warren Olney, Jr., for property at Telegraph and Allston way	2,700.00	
		70,599.
		$480,597.

Schedule No. 10]

NEW BUILDINGS AND IMPROVEMENTS

n Berkeley:		
Campanile construction	$4,992.05	
Filter Plant, Strawberry Cañon	4,228.02	
Gilman Hall	49,862.15	
Hilgard Hall	118,569.28	
Music Building alterations	274.05	
North Hall demolition	1,531.55	
Philosophy Building removal	41.50	
Planting	3,619.43	
Satner Gateway	705.26	
Steam heating, California Hall	3,453.40	
Storehouse Building	158.31	
Surfacing roads on Campus	6,752.36	
University Library Building Addition	108,867.12	
University Power Plant addition	10,619.47	
Benjamin Ide Wheeler Hall	6,695.57	
Boalt Hall furnishings	2,041.60	
California Hall lighting	135.65	
Gilman Hall furnishings	10,637.94	
Hilgard Hall furnishings	15,557.76	
High pressure line appropriation	2,335.86	
History Department—cases	158.15	
University Library furnishings	18,487.02	
Museum of Vertebrate Zoology equipment	400.00	
Printing Office equipment	1,632.14	
South Hall heating	3,578.75	
Wheeler Hall furnishings	1,774.07	
South Drive underground wiring	5,390.13	
Fish Experiment Laboratory repairs	31.17	
Undistributed expenditures—Building Bond programme	457.49	
	$382,987.25	
Less Sale of Wheeler Hall furnishings	1,281.00	
		$381,706.25
ot in Berkeley:		
Citrus Experiment Station Buildings	$52.26	
Citrus Experiment Station Laboratory	1,833.66	
Citrus Experiment Station Improvements	14,987.34	
University Farm, Animal Husbandry	3,464.25	
University Farm, Dining Hall addition	108.55	
University Farm, small buildings	10,210.49	
University Farm, sewerage and water	5,085.95	
Buildings at La Jolla	306.09	
Lick Observatory, steam heating plant	2,744.03	
University Hospital Building	111,607.90	
University Hospital Building alterations	12,886.15	
University Hospital furnishings	34,719.43	
Affiliated Colleges heating system	941.70	
		198,947.80
		$580,654.05

[Schedule No. 11]

EDUCATION AND RESEARCH

Various Departments at Berkeley:		
Expenditures from general funds	$897.565.03	
Expenditures from donations	42,891.34	
Expenditures from endowment funds	84,665.95	
Expenditures from Morrill College Aid Fund	22,500,26	
		$1,047,622.
University Hospital:		
Expenditures from general funds	$116,050.83	
Expenditures from Hospital receipts	115,509.82	
Expenditures from endowment fund income	9,331.12	
Expenditures from donations	2,400.00	
		243,291.
Agricultural Departments:		
Expenditures from general funds	$40,225.36	
Expenditures from Adams Fund	15,000.00	
Expenditures from Hatch Fund	15,000.00	
Expenditures from Smith Lever Fund, Federal	39,433.21	
Expenditures from Smith Lever Fund, State	29,433.21	
Expenditures from Morrill College Aid Fund	27,499.74	
Expenditures from State appropriations	420,398.75	
		586,990.
University Extension	$45,495.11	
University Extension, Los Angeles	8,536.27	
University Extension, State appropriation	35,000.00	
Scripps Institution for Biological Research	35,416.56	
		124,447.
Purchase of Library books out of donations and endowment funds	$9,465.68	
Summer Session expenditures	68,518.86	
Intersession expenditures	36.86	
Los Angeles Medical Department, 1917	13,999.34	
Los Angeles Medical Department Dispensary	2,630.97	
Hooper Foundation, research expenses	47,069.41	
Hooper Foundation, biological research expenses	1,359.23	
Medicine—State appropriation	49,999.92	
		193,080.2
		$2,195,432.8

Schedule No. 12]

DISBURSEMENTS FROM CLASS FUNDS, SCHOLARSHIPS, FELLOWSHIPS AND PRIZES

onnheim Scholarship	$4,055.00
has. P. Cole Scholarship	125.00
. R. Davis Scholarship	600.00
olbeer Scholarship	800.00
elen Du Bois Scholarship	175.00
ames M. Goewey Scholarship	600.00
ellman Scholarship	1,000.00
ornelius B. Houghton Scholarship	100.00
lbert Sidney Johnston Scholarship	200.00
arrie M. Jones Scholarship	850.00
artin Kellogg Fellowship	1,399.92
eConte Fellowship	500.00
get Scholarship	100.00
ank M. Pixley Scholarship	150.00
effield Sanborn Scholarship	750.00
n Francisco Girls' Union Scholarship	200.00
. Stebbins Scholarship	150.00
rtha Henicke Taussig Scholarship	500.00
illard D. Thompson Scholarship	3,000.00
iversity Medal	135.00
hiting Fellowship	60.00
umna 1904 Scholarship	125.00
umna 1910 Scholarship	250.00
yce Historical Essay Prize	100.00
eanor Gates Scholarship	300.00
oebe A. Hearst Scholarship	2,520.00
lliam Watt Kerr Scholarship	400.00
tive Sons of the Golden West Fellowship	3,000.00
sbyterian Church Scholarship	150.00
Jose High School Scholarship	125.00
te of California Scholarship	3,550.00
i Strauss Scholarship	3,075.00
dish-American Patriotic League Scholarship	125.00
versity Fellowships	3,754.99
ments to Class Secretaries and others	1,086.98
vison Annuity	2,700.00
gard Annuity	2,400.00
s Fund loans written off	9.00
	$39,120.89

[Schedule No. 13]

DEPARTMENTAL SALES, ETC., EXPENDITURES

Agricultural:	
Agriculture—Director's	$3360
Citrus Sales	8,5166
Dairy	16,6366
Dairy Certification, Alameda	1,9765
Dairy Certification, San Francisco	2,5648
Fertilizer Control	12,0061
Floriculture	2579
Forestry	584
Hog Cholera Serum	35,7569
Imperial	3434
Insecticide and Fungicide registrations	33
Kearney Experiment Station	5015
Official Advanced Registry tests	14,2038
Viticulture	73-7
University Farm income	185,9304
Veterinary	1,9388
Soil Chemistry	2481
Soil Survey	774
Nutrition	87
Various:	
Music and Drama	7,0913
Sale of ''Agassiz''	880
Rabbitry	7301
	$290,0073

[Schedule No. 13A]

EXPENDITURES IN CONNECTION WITH WAR ACTIVITIES

Aeronautics	$126,358.23
Aeronautics Mess	19,783.50
Various "Aeronautics Barracks"	48,324.42
Aeronautics Airplane Laboratory	4,062.60
Aeronautics Engine Laboratory	3,764.75
Remitted to Dr. Weeks for University Base Hospital in France	10,100.00
Astronomy—Naval Preparation	681.00
Military Census	211.93
Military Information	1,765.00
Radio Communication	176.13
Economics—Storekeeping	68.56
Shipping Board Course	1,316.62
Naval Architecture	98.68
Chemistry research—State Council of Defense	331.25
Petroleum research	1,500.00
Scientific research, 1916–17	2,601.02
Scientific research, 1917–18	17,010.60
Vocational training	463.93
	$238,618.22

[Schedule No. 14]

NET ADDITIONS TO ENDOWMENT FUNDS

Donations to funds (Schedule No. 8)	$122,175.77	
Fund income, credited to funds	8,538.60	
Interest on notes, credited to funds	469.30	
		$131,183.6
Less Amount transferred from Doe Library Fund to Building Bond Programme Suspense Account		97,168,1
Net increase in funds		$34,015.5

Reconciliation of Endowment Funds as shown on Balance Sheet:		
Endowment Funds at June 30, 1917	$5,460,976.07	
Increases as above	34,015.53	
		$5,494,991.6
Proceeds of sale of stocks		593.0
		$5,495,584.6
Less Sather Campanile expenditures	$4,992.05	
Amounts written off loan funds	161.70	
		5,153.7
		$5,490,430.8

[Schedule No. 15]

INCOME AND EXPENDITURES PRIOR TO JUNE 30, 1918, CARRIED FORWARD

Income:	
Fund interest accounts	$38,248.67
Scholarships and prizes	483.05
Donations	72,889.12
Jane K. Sather Fund for Campanile	10,145.33
	$121,766.17
Expenditures:	
Agricultural Department sales	$35,841.24
Construction	94,246.03
Hooper Foundation Research expenses	176,888.41
University Hospital Building Fund	203,870.19
Miscellaneous	31,664.11
	$542,509.98

STATISTICS OF THE INFIRMARY

COMPILED BY THE UNIVERSITY PHYSICIAN

INFIRMARY SUMMARIES

(August 17, 1917–May 15, 1918)

DISPENSARY

	Men	Women	Total
Individuals treated	1,697	2,328	4,025
Number of treatments	16,131	14,549	30,680
Number of diagnoses	5,033	5,417	10,450
Number of smallpox vaccinations	316	251	567
Number of typhoid vaccinations	17	16	33
Number of typhoid skin tests	5	4	9
Number of students entitled to treatment during year			6,011
Number of days open			271
Average number of patients treated daily			113.
Average number of treatments per patient			7.
Percentage of students treated			66

HOUSE PATIENTS

Discharged—

	Men	Women	Total
Well	326	263	589
Relieved	135	47	182
Not relieved	5	4	9
Deceased	1	0	1
Total number of Infirmary days			3,770
Number of days open			271
Total number of diagnoses			1,107
Total number of individuals			673
Students who were in the Infirmary more than once during the year			78
Average stay in days			5.
Average number of patients per day			13.
Largest number of patients in one day			33
Surgical cases			284
Operations			190
Anaesthesia (general)			102

	Total
Patients examined by X-ray	134
Prescriptions	507
Laboratory reports—	
Urine analyses	831
Throat cultures	163
Sputum	47
Blood counts	155
Feces	25
Stomach contents	4
Urethral and prostatic smears	21
Miscellaneous	16
Wassermanns	33

DENTAL DEPARTMENT

(August 17, 1917–May 15, 1918)

Gold fillings—	
Inlay	72
Malletted	17
Amalgam fillings	1,098
Synthetic fillings	367
Cement fillings	151
Prophylaxis	503
Extraction—	
N^2O	14
Novocaine	150
Root canal filling	121
Putrescent pulp abscess—	
Treatment, formo-cresol	153
Phenol and iodine	3
Pulp removal—	
Pressure, cocaine	9
Novocaine	22
AS^2O^3	60
X-rays	273
Treatments (miscellaneous)	130
Hyperemia, arterial	3
Pulp capping	20
Root amputation	24
Treatment, deep caries	35
Treatment, gingivitis	4
Treatment, pyorrhoea	11
Removal, impacted molar	6
Reset	19
Wisdom teeth, gum lanced	55
Acute pericementitis	4
Alveolar abscess—	
Acute	4
Chronic	1
Broken appointments	62
Abscess lancing	6

INFIRMARY REPORT, 1917–18

MEN AND WOMEN

	Dispensary Patients			House Patients		
Diseases	Men	Women	Total	Men	Women	Total
I. General Diseases:						
(International Classification)						
1. Typhoid fever	......	......	......	1	......	1
1*b* Anti-typhoid inocculation	9	9	18	......	......	......
Typhoid skin test	3	3	6	......	......	......
4. Malaria	5	......	5	1	1	2
6. Measles	21	9	30	15	......	15
7. Scarlet fever	......	1	1	1	1	2
8. Whooping cough	......	3	3	......	1	1
9. Diphtheria and croup—						
Diphtheria	......	......	......	2	1	3
Diphtheria carrier	1	......	1	......	......	......
10. Influenza	4	......	4	5	......	5
18. Erysipelas	......	......	......	3	......	3
19. Other epidemic diseases—						
Chicken pox	1	4	5	2	2	4
Mumps	8	5	13	17	2	19
Rubeola	4	32	36	33	73	106
Vaccination—						
Vaccinia	188	226	414	6	2	8
Vaccinoid	23	14	37	......	......	......
Reaction of immunity	10	18	28	......	......	......
28. Tuberculosis of the lungs	1	1	2	1	1	2
34. Tuberculosis of other organs —						
Pleura	......	......	......	......	1	1
Spine	......	......	......	......	1	1
36. Rickets—						
(*c*) Curvature of spine—						
Scoliosis	3	5	8	......	......	......
38. Gonococcus infection—						
(*b*) Gonococcus infection of:						
Epididymis	1	......	1	1	......	1
Urethra	6	......	6	......	......	......
46. Other tumors—						
Tumor of:						
Back	......	......	......	1	......	1
Breast	1	2	3	1	......	1
Neck	......	......	......	1	......	1
Fibroadenomota of breast	......	......	......	......	1	1
Osteoma of toe	......	1	1	......	......	......
Cyst:						
Lipoma, arm—excision of	......	......	......	......	1	1
Papilloma, scalp	1	......	1	......	......	......
Papillomata, multiple	1	......	1	......	......	......
Sebaceous	9	4	13	......	......	......
47. Acute articular rheumatism	1	......	1	1	......	1
50. Diabetes—						
Diabetes mellitus	......	......	......	2	......	2
54. Anaemia	1	15	16	......	1	1

INFIRMARY REPORT, 1917–18—(*Continued*)

MEN AND WOMEN

Diseases	Dispensary Patients			House Patients		
	Men	Women	Total	Men	Women	Total
55. Other general diseases—						
Obesity	1	1	2	......	......	......
Diseases of the Nervous System and of the Organs of Special Sense:						
61. Simple meningitis—						
Meningitis, cerebrospinal, epidemic	......	......	......	1	......	1
66. Paralysis without specified cause—						
Paralysis of:						
Arm	......	1	1	......	......	......
Leg	......	2	2	......	......	......
68. Other forms of mental alienation—						
Dementia praecox	......	1	1	......	......	......
Melancholia	......	1	1	......	......	......
Psychasthenia	......	1	1	......	2	2
73. Neuralgia and neuritis—						
Hysteria	......	3	3	......	2	2
Neuralgia	8	11	19	......	......	......
Neuritis	1	......	1	1	......	1
74. Other diseases of the nervous system—						
Angiospastic oedema	......	2	2	......	......	......
Migraine	2	......	2	......	......	......
Neurasthenia	11	24	35	......	......	......
Syncope	......	3	3	1	......	1
Vertigo	2	3	5	......	......	......
75. Diseases of the eyes and their adnexa—						
(*a*) Conjuctivitis:						
Acute	88	46	134	5	3	8
Chronic	1	3	4	......	......	......
Phlyctenular	1	......	1	......	......	......
(*c*) Other diseases of the eyes and their adnexa—						
Astigmatism:						
Simple hyperopic	11	17	28	......	......	......
Compounds hyperopic	32	54	86	......	......	......
Simple myopic	11	15	26	......	......	......
Compound myopic	11	9	20	......	......	......
Mixed	2	2	4	......	......	......
Blepharitis, acute	4	10	14	......	......	......
Blepharitis, chronic	......	1	1	......	......	......
Chalazion	......	1	1	......	......	......
Chalazion, operation for	......	1	1	......	......	......
Cataract, post cortical	1	......	1	......	......	......
Episcleritis	1	......	1	......	......	......
Exophoria	1	......	1	......	......	......
Foreign body	10	8	18	......	......	......

INFIRMARY REPORT, 1917–18—(*Continued*)

MEN AND WOMEN

	Dispensary Patients			House Patients		
Diseases	Men	Women	Total	Men	Women	Tota
Hordeolum	24	37	61	......	......	......
Hyperopia	14	15	29	......	......	......
Iritis	3	2	5	2	......	2
Myopia	7	2	9	......	......	......
Presbyopia	1	......	1	......	......	......
Retinitis	1	......	1	2	......	2
76. Diseases of the ears—						
Aural polyp, operation for	1	......	1	......	......	......
Cerumen, accumulation of	69	62	131	......	......	......
Catarrh of eustachian tube	3	4	7	......	......	......
Haematoma of ear	1	......	1	......	......	......
Myringitis	4	3	7	......	......	......
Otitis media, acute	10	11	21	......	3	3
Otitis media, chronic	3	2	5	......	......	......
Rupture of tympanum	1	......	1	......	......	......
III. DISEASES OF THE CIRCULATORY SYSTEM:						
79. Organic diseases of the heart—						
(*a*) Valvular disease, chronic cardiac	6	......	6	......	......	......
(*b*) Endocarditis, chronic	1	3	4	......	1	1
(*c*) Arrhythmia	......	3	3	......	......	......
Dilatation of heart	......	2	2	......	......	......
Functional heart	......	4	4	......	......	......
Mitral regurgitation (compensated)	......	2	2	......	......	......
Mitral regurgitation (decompensated)	1	1	2	......	......	......
Myocarditis	......	......	......	......	1	1
83. Diseases of the veins—						
Haemorrhoids	12	5	17	......	......	......
Haemorrhoids, operation for	......	......	......	2	......	2
Varicocele	3	......	3	......	......	......
Varicocele, operation for	......	......	......	3	......	3
Varicose veins	1	......	1	......	......	......
Varicose, veins operation for	......	......	......	1	......	1
Varicose ulcer	1	......	1	......	......	......
84. Diseases of the lymphatic system—						
Adenitis:						
Axillary	1	1	2	......	......	......
Cervical	9	13	22	......	3	3
Cervical, operation for	......	......	......	......	3	3
Inguinal	6	......	6	1	......	1
Tuberculosis	......	1	1	......	......	......
Lymphadenitis	......	......	......	......	1	1
85. Haemorrhage—						
Epistaxis	12	14	26	......	1	1
Palpitation	......	3	3	......	......	......
Tachycardia	......	1	1	......	......	......

INFIRMARY REPORT, 1917–18—(*Continued*)

MEN AND WOMEN

Diseases	Dispensary Patients			House Patients		
	Men	Women	Total	Men	Women	Total
V. Diseases of the Respiratory System:						
86. Diseases of the nasal fossae—						
Adenoids	......	1	1	......	......	......
Adenoids, operation for	......	......	......	9	10	19
Catarrh, tubotympanic	1	2	3	......	......	......
Catarrh, acute tubal	2	......	2	......	......	......
Deviated septum	2	......	2	......	......	......
Deviated septum, submucous resection for	13	2	15	23	3	26
Polyps, operation for	......	......	......	1	......	1
Turbinate	......	1	1	......	......	......
Turbinate, operation for	......	3	3	......	1	1
Rhinitis, acute	973	958	1,931	8	9	17
Rhinitis, chronic	6	8	14	......	......	......
Rhinitis, atrophic	1	......	1	......	......	......
Rhinitis, turgescent	......	1	1	......	......	......
Spur, operation for	4	3	7	......	1	1
87. Diseases of the larynx						
Laryngitis, acute	56	304	360	5	13	18
Laryngitis, chronic	1	3	4	......	......	......
88. Diseases of the thyreoid body—						
Goitre	......	1	1	......	......	......
Hyperthyreoidism	2	11	13	1	......	1
Hypertrophied thyreoid	......	2	2	......	......	......
89. Acute bronchitis—						
Bronchitis, acute	39	13	52	13	6	19
Tracheitis, acute	271	242	513	37	10	47
Tracheitis, chronic	......	2	2	......	......	......
90. Chronic bronchitis	2	......	2	......	......	......
91. Bronchopneumonia	......	......	......	......	1	1
92. Pneumonia—						
Pneumonia, lobar	......	......	......	4	1	5
93. Pleurisy	4	10	14	1	4	5
Pleurisy with effusion	1	......	1	2	4	6
Pleurisy, tuberculous	......	......	......	......	2	2
Empyema, operation for	......	......	......	1	......	1
96. Asthma	2	2	4	......	1	1
98. Other diseases of the respiratory system—						
Hayfever	......	2	2	......	......	......
Diseases of the Digestive System:						
99. Diseases of the mouth and adnexa—						
(*a*) Diseases of the teeth and gums—						
Abscess, alveolar	2	1	3	2	1	3
Caries	......	1	1	......	......	......
Gingivitis	......	3	3	......	1	1
Impacted 3rd molar	......	2	2	2	1	3
Odontalgia	1	......	1	......	......	......

INFIRMARY REPORT, 1917–18—(*Continued*)

MEN AND WOMEN

	Dispensary Patients			House Patients		
Diseases	Men	Women	Total	Men	Women	Total
Pyorrhoea	......	1	1	......	......	......
Pulp stone	......	......	......	1	......	1
Extraction of teeth	......	......	......	......	1	1
Unerrupted 3rd molar	......	......	......	1	......	1
Root amputation	......	......	......	1	......	1
(*b*) Other diseases of the mouth and adnexa—						
Stomatitis	15	16	31	......	1	1
Ulcer of the mouth	......	1	1	......	......	......
100. Diseases of the pharynx—						
Abscess, tonsillar	2	......	2	3	2	5
Amygadalitis, acute	350	306	656	17	13	30
Amygdalitis, chronic	35	17	52	......	......	......
Amygdalitis, acute follicular	......	7	7	1	6	7
Amygdalitis, operation for	......	......	......	59	49	108
Amygdalolith	......	2	2	......	......	......
Amygdalolith, removal of	......	1	1	......	......	......
Frenum, operation for	......	1	1	......	......	......
Globus hystericus	......	1	1	......	......	......
Pharyngitis, acute	675	712	1,387	63	57	120
Pharyngitis, chronic	1	10	11	......	......	......
Pharyngitis, epi	1	......	1	......	......	......
Tonsil, haemorrhage of	1	......	1	......	......	......
Uvula, elongation of, operation for	......	1	1	......	......	......
Uvula, hypertrophy of	......	1	1	......	......	......
102. Ulcer of the stomach—						
Ulcer of stomach	......	1	1	......	1	1
103. Other diseases of the stomach—						
Fermentation, gastric	3	2	5	1	......	1
Gastritis, acute	9	20	29	......	......	......
Hyperchlorhydria	3	5	8	......	......	......
Nervous dyspepsia	......	......	......	1	1	2
105. Diarrhhoea and enteritis—						
(*a*) Ulcer of duodenum	1	......	1	1	1	2
Ulcer of duodenum, chronic	......	......	......	1	......	1
(*b*) Duodenitis	1	......	1	......	......	......
Enteritis	34	19	53	8	7	15
Fermentation, intestinal	1	12	13	......	......	......
Gastroenteritis	10	2	12	1	......	1
Gastroduodenitis	......	42	42	......	4	4
Intestinal flatus	......	2	2	......	......	......
107. Intestinal parasites—						
Ascaris lumbricoides	......	......	......	1	......	1
Oxyuris vermicularis	......	1	1	......	......	......
108. Appendicitis—						
Appendicitis, acute	4	16	20	2	10	12
Appendicitis, chronic	......	8	8	1	1	2
Appendicitis, operation for	......	......	......	3	6	9

INFIRMARY REPORT, 1917–18—(*Continued*)

MEN AND WOMEN

Diseases	Dispensary Patients			House Patients		
	Men	Women	Total	Men	Women	Total
109. Hernias—						
Hernia, inguinal	7	......	7	......	......	......
Hernia, inguinal, operation for	......	......	......	6	......	6
110. Diseases of the intestine—						
(*a*) Diseases of the anus and faecul fistulas:						
Enteroptosis	1	1	2	......	......	......
Fistula in ano, operation for	......	......	......	1	......	1
Fistula over coccyx, operation for	......	......	......	......	1	1
Fistula, rectal, operation for	......	......	......	......	1	1
(*b*) Other diseases of the intestines:						
Autointoxication	5	......	5	......	......	......
Constipation	87	80	167	4	......	4
111. Acute yellow atrophy of the liver—						
Jaundice, catarrhal	2	......	2	......	......	......
114. Biliary calculi—						
Cholelithiasis	......	......	......	......	1	1
117. Simple peritonitis—						
Adhesions of peritonaeum	......	4	4	......	......	......
Peritonitis, acute	......	......	......	......	1	1
I. NON-VENEREAL DISEASES OF THE GENITO-URINARY SYSTEM AND ADNEXA:						
119. Acute nephritis—						
Nephritis, acute	3	2	5	3	4	7
Nephritis, chronic	1	2	3	2	1	3
120. Bright's disease—						
Albuminuria	2	......	2	......	......	......
122. Other diseases of the kidneys and adnexa—						
Pyelitis	......	......	......	......	2	2
124. Diseases of the bladder—						
Cystitis, acute	1	2	3	......	......	......
Incontinence of urine	......	1	1	......	......	......
125. Diseases of the urethra—						
Urethritis, acute	11	......	11	......	......	......
127. Non-venereal diseases of the male genital organs—						
Balanoposthitis	6	......	6	......	......	......
Epididymitis	......	......	......	1	......	1
Hydrocele	3	......	3	......	......	......
Hydrocele, operation for	......	......	......	1	......	1
Meatomy	1	......	1	......	......	......
Orchitis	2	......	2	2	......	2
Phimosis	1	......	1	......	......	......
Phimosis, operation for	......	......	......	8	......	8
Seminal emissions	2	......	2	......	......	......

INFIRMARY REPORT, 1917–18—(*Continued*)

MEN AND WOMEN

	Dispensary Patients			House Patients		
Diseases	Men	Women	Total	Men	Women	Tota
128. Uterine haemorrhage—						
Menorrhagia	......	6	6	......	2	2
Metrorrhagia	......	10	10	......	1	1
130. Other diseases of the uterus—						
(*a*) Metritis:						
Endocervicitis	......	1	1	......	......	......
Endometritis, operation for	......	......	......	......	1	1
Cervicitis	......	3	3	......	......	......
(*b*) Other diseases of the uterus:						
Amenorrhoea	....	32	32	......	......	......
Anteflexion, uterus	......	2	2	......	......	......
Cervical erosion	......	4	4	......	......	......
Cervical erosion, operation for	......	......	......	......	2	2
Curettage	......	......	......	......	1	1
Dilatation	......	......	......	......	3	3
Dysmenorrhoea	......	45	45	......	2	2
Irregular menses	......	2	2	......	......	......
Menopause	......	2	2	......	......	......
Leucorrhoea	......	5	5	......	......	......
Polypi, uterus	......	1	1	......	......	......
Prolapsis, uterus	......	2	2	......	......	......
Retroflexion, uterus	......	2	2	......	......	......
Retroversion, uterus	......	7	7	......	......	......
133. Non-puerperal diseases of the breast—						
Lactation	......	1	1	......	......	......
Mastitis, acute	......	1	1	......	......	......
VII. The Puerperal State:						
134. Accidents of pregnancy—						
(*a*) Accidents of pregnancy:						
Pregnancy	......	1	1	......	......	......
(*b*) Accidents of pregnancy:						
Abortion	......	......	......	......	1	1
VIII. Diseases of the Skin and of the Cellular Tissue:						
143. Furuncle—						
Carbuncle of:						
Arm	1	......	1	......	......	......
Face	......	......	......	1	......	1
Neck	1	......	1	......	......	......
Scrotum	......	......	......	1	......	1
Furuncle of:						
Abdomen	1	......	1	......	......	......
Arm	22	6	28	......	......	......
Axilla	5	5	10	......	......	......
Back	1	1	2	......	......	......
Breast	......	1	1	......	......	......
Buttock	6	2	8	......	......	......

INFIRMARY REPORT, 1917–18—(*Continued*)

MEN AND WOMEN

	Dispensary Patients			House Patients		
Diseases	Men	Women	Total	Men	Women	Total
Chest	2	......	2	......	......	......
Ear	7	8	15	......	......	......
Eyelid	1	1	2	......	......	......
Face	43	35	78	1	......	1
Finger	4	3	7	......	......	......
Foot	2	......	2	......	......	......
Hand	2	......	2	1	......	1
Head	5	4	9	1	......	1
Knee	2	1	3	......	......	......
Leg	6	2	8	......	......	......
Lip	1	2	3	......	......	......
Neck	78	2	80	......	......	......
Nose	16	5	21	1	......	1
Penis	3	......	3	......	......	......
Scalp	8	3	11	......	......	......
Shoulder	......	1	1	......	......	......
Scrotum	1	......	1	......	......	......
Thigh	13	6	19	......	......	......
Toe	3	......	3	......	......	......
Wrist	1	......	1	......	......	......
Miscellaneous	8	4	12	......	......	......
Multiple	......	1	1	......	......	......
144. Acute Abscess—						
Abscess of:						
Arm	1	......	1	......	......	......
Axilla	1	2	3	......	......	......
Buttock	......	1	1	......	......	......
Coccyx	1	......	1	......	......	......
Coccyx, post operation	......	......	......	1	......	1
Ear	2	......	2	......	......	......
Eyelid	1	......	1	......	......	......
Face	3	......	3	1	......	1
Finger	6	4	10	......	......	......
Foot	1	......	1	......	......	......
Head	1	......	1	......	......	......
Heel	......	2	2	......	......	......
Leg	1	......	1	......	......	......
Lip	......	1	1	......	......	......
Sacro-coccyx region	......	1	1	......	......	......
Shoulder	1	......	1	......	......	......
Thigh	......	2	2	......	......	......
Toe	8	5	13	......	......	......
Miscellaneous	1	......	1	......	......	......
Cellulitis of:						
Ankle	......	1	1	......	1	1
Arm	3	......	3	......	......	......
Buttock	......	1	1	......	......	......
Ear	......	1	1	......	......	......

INFIRMARY REPORT, 1917–18—(*Continued*)

MEN AND WOMEN

Diseases	Dispensary Patients			House Patients		
	Men	Women	Total	Men	Women	Total
Eye	......	1	1	......	......	......
Eyelid	......	1	1	......	......	......
Finger	10	22	32	......	1	1
Foot	17	3	20	4	2	6
Hand	5	1	6	2	1	3
Heel	2	17	19	1	1	2
Knee	4	4	8	3	2	5
Leg	4	......	4	1	......	1
Lip	......	1	1	......	......	......
Neck	......	1	1	......	1	1
Nose	1	......	1	......	......	......
Scalp	1	......	1	......	......	......
Toe	10	5	15	1	......	1
Miscellaneous	1	7	8	......	......	......
145. Other diseases of the skin and adnexa—						
(*a*) Trichophytosis	52	24	76	......	......	......
(*b*) Scabies	2	10	12	......	......	......
(*c*) Other diseases of the skin and adnexa:						
Acne	56	69	125	......	......	......
Alopecia areata	4	30	34	......	......	......
Callositas	3	......	3	......	......	......
Clavus	20	56	76	......	......	......
Comedo	3	4	7	......	......	......
Dermatitis	3	1	4	......	1	1
Dermatitis, unknown origin	......	1	1	......	1	1
Dermatitis medicamentosa	1	......	1	......	......	......
Dermatitis venenata	75	149	224	1	5	6
Ecthyma	......	1	1	......	......	......
Eczema	93	16	109	1	......	1
Eczema, gangrenous	......	......	......	1	......	1
Eczema, seborrhoeic	6	3	9	......	......	......
Erythema	......	2	2	......	......	......
Erythema multiforme	......	5	5	......	2	2
Erythema nodosum	......	2	2	......	......	......
Herpes	19	25	44	......	......	......
Herpes zoster	2	2	4	......	1	1
Hyperidrosis	7	7	14	......	......	......
Ichthyosis	......	1	1	......	......	......
Impetigo contagiosa	31	15	46	......	......	......
Intertrigo	......	2	2	......	......	......
Parasitic diseases:						
Pemphigus	......	1	1	......	......	......
Pernio	1	12	13	......	......	......
Phthririasis	1	......	1	......	......	......
Pityriasis rosea	5	10	15	......	......	......
Pruritis ani	......	1	1	......	......	......
Pruritis vulvae	......	2	2	......	......	......

INFIRMARY REPORT, 1917–18—(*Continued*)

MEN AND WOMEN

	Dispensary Patients			House Patients		
Diseases	Men	Women	Total	Men	Women	Total
Psoriasis	1	......	1	......	......	......
Roseola, unknown origin	......	......	......	......	1	1
Seborrhoea	9	75	84	......	......	......
Ulcer of:						
Lip	......	1	1	......	......	......
Heel	......	1	1	......	......	......
Urticaria	22	44	66	2	......	2
Urticaria, gigantic	......	......	......	2	......	2
Urticaria, erythematous	......	1	1	......	1	1
Xanthoma	1	......	1	......	......	......
Wart of:						
Arm	1	......	1	......	......	......
Back	1	......	1	......	......	......
Chest	1	......	1	......	......	......
Face	3	......	3	......	......	......
Finger	8	14	22	......	......	......
Foot	33	23	56	......	......	......
Hand	19	19	38	......	......	......
Head	1	......	1	......	......	......
Leg	1	......	1	......	......	......
Lip	1	......	1	......	......	......
Neck	2	......	2	......	......	......
Nose	1	......	1	......	......	......
Penis	1	......	1	......	......	......
Scalp	2	......	2	......	......	......
Wrist	2	......	2	......	......	......
Nails:						
Ingrowing nail	27	7	34	......	......	......
Onychia	......	1	1	......	......	......
Paronychia	8	12	20	......	......	......
Ingrowing hair	1	......	1	......	......	......
Blister of:						
Finger	1	......	1	......	......	......
Foot	3	......	3	......	......	......
Hand	1	......	1	......	......	......
Toe	1	......	1	......	......	......
DISEASES OF THE BONES AND OF THE ORGANS OF LOCOMOTION:						
46. Diseases of the bones—						
Ethmoid sinusitis	1	......	1	......	......	......
Ethmoid sinusitis, chronic	......	1	1	......	......	......
Maxillary sinusitis, chronic	......	......	......	......	1	1
Exostosis	2	......	2	......	......	......
Frontal sinusitis	17	6	23	5	......	5
Periostitis	......	1	1	......	......	......
47. Diseases of the joints—						
Ankylosis, hip	......	2	2	......	......	......
Arthritis	6	10	16	1	......	1

INFIRMARY REPORT, 1917–18—(*Continued*)

MEN AND WOMEN

	Dispensary Patients			House Patients		
Diseases	Men	Women	Total	Men	Women	Total
Synovitis	2	......	2	......	......	......
Synovitis, chronic	......	1	1	......	......	......
Synovitis, neisser	1	......	1	......	......	......
Toxic joints	......	2	2	......	......	......
Loose body in knee joint, operation for	......	......	......	1	......	1
148. Amputations—						
Amputation of:						
Finger	1	......	1	......	......	......
Toe	......	......	......	......	1	1
149. Other diseases of the organs of locomotion—						
Bursitis	6	13	19	1	......	1
Faulty statics	......	1	1	......	......	......
Flat anterior arch	12	25	37	......	......	......
Ganglion	......	16	16	......	......	......
Hallux valgus	3	4	7	......	......	......
Lumbago	1	3	4	......	......	......
Metatarsalgia	......	1	1	......	......	......
Myalgia	......	8	8	......	......	......
Myositis	17	6	23	......	......	......
One leg shorter than other	......	18	18	......	......	......
Pes planus	38	71	109	......	......	......
Pronated feet	4	50	54	......	......	......
Tenosynovitis	8	6	14	......	......	......
Tenosynovitis (gonorrheal)	1	......	1	......	......	......
Torticollis	1	4	5	......	......	......
Pes valgus	......	5	5	......	......	......
X. MALFORMATIONS:						
150. Congenital malformations—						
Congenital malformation, pelvic girdle	1	......	1	......	......	......
Naevus	2	1	3	......	......	......
Naevus, vascular, removal of	......	1	1	......	......	......
Naevus, removal of	......	1	1	......	......	......
XIII. AFFECTIONS PRODUCED BY EXTERNAL CAUSES:						
164. Poisoning by food	2	12	14	......	3	3
165. Other acute poisonings—						
(*a*) Venomous bites and stings:						
Insect sting	5	18	23	......	......	......
167. Burns—						
Burn of:						
Ankle	1	......	1	......	......	......
Arm	5	6	11	......	......	......
Axilla	......	1	1	......	......	......
Back	1	......	1	......	......	......
Buttock	......	1	1	......	......	......
Chin	......	1	1	......	......	......

INFIRMARY REPORT, 1917–18—(*Continued*)

MEN AND WOMEN

Diseases	Dispensary Patients			House Patients		
	Men	Women	Total	Men	Women	Total
Ear	1	......	1	......	......	......
Elbow	......	1	1	......	......	......
Eye	2	......	2	1	......	......
Face	3	2	5	1	......	1
Finger	4	13	17	......	......	......
Foot	2	......	2	......	......	......
Hand	6	13	19	......	......	......
Knee	1	......	1	......	......	......
Leg	2	2	4	......	......	......
Mouth	......	3	3	......	......	......
Neck	1	1	2	......	......	......
Nose	......	1	1	......	......	......
Shoulder	1	......	1	......	......	......
Thigh	2	1	3	......	......	......
Tongue	......	1	1	......	......	......
Wrist	1	3	4	......	......	......
Miscellaneous	1	......	1	......	......	......
Sunburn	2	2	4	1	......	1
71. Traumatism by cutting or piercing instruments—						
Laceration of:						
Arm	1	1	2	1	......	1
Chin	1	......	1	......	......	......
Ear	......	2	2	......	1	1
Eyebrow	4	1	5	......	......	......
Eyelid	2	......	2	......	......	......
Finger	46	29	75	......	1	1
Foot	......	1	1	......	......	......
Hand	12	6	18	......	......	......
Head	7	......	7	......	......	......
Heel	......	......	......	......	1	1
Hip	......	1	1	......	......	......
Knee	1	2	3	......	......	......
Lip	2	......	2	......	......	......
Leg	1	......	1	......	......	......
Neck	1	......	1	......	......	......
Nose	2	......	2	......	1	1
Scalp	8	1	9	1	1	2
Toe	2	......	2	......	......	......
Wrist	1	......	1	......	......	......
Trauma, nose	1	......	1	......	......	......
nail, operation for	1	......	1	......	......	......
76. Injuries by animals—						
Dog bite	3	1	4	......	......	......
Rat bite	7	1	8	......	......	......
85. Fractures—						
(*a*) Dislocations—						
Dislocation of:						
Clavicle	1	......	1	1	......	1

INFIRMARY REPORT, 1917–18—(*Continued*)

MEN AND WOMEN

Diseases	Dispensary Patients			House Patients		
	Men	Women	Total	Men	Women	Tot
Elbow	......	1	1	......	......	....
Finger	......	2	2	......	......	.....
Hip	......	1	1	......	......	.....
Sacro iliac	1	3	4	......	......	.....
Shoulder	1	......	1	......	......	.....
Wrist	1	......	1	......	......	.....
Knee	......	1	1	......	......	.....
Contraction of tendon, operation for	......	......	......	1	......	[illegible]
(*b*) Sprains—						
Sprain of:						
Achilles tendon	1	......	1	......	......	.....
Ankle	39	53	92	3	2	[illegible]
Arch	2	1	3	......	......	.....
Arm	......	1	1	......	......	.....
Back	......	1	1	......	......	.....
Clavicle	2	......	2	......	......	.....
Elbow	5	......	5	......	......	.....
Finger	8	8	16	......	......	.....
Foot	7	6	13	......	......	.....
Hand	4	1	5	......	......	.....
Hip	......	1	1	......	......	.....
Knee	22	3	25	......	......	.....
Sacro iliac	......	2	2	......	......	.....
Shoulder	10	1	11	......	......	.....
Thigh	2	......	2	......	......	.....
Thumb	18	......	18	......	......	.....
Toe	2	......	2	......	......	.....
Wrist	16	10	26	1	......	1
Miscellaneous	3	......	3	......	......	.....
(*c*) Fractures—						
Fracture of:						
Arm	1	......	1	......	1	1
Finger	6	......	6	......	......	.....
Hand	1	......	1	......	......	.....
Leg	......	......	......	2	1	3
Nose	1	......	1	......	......	.....
Scaphoid	1	......	1	......	......	.....
Skull	......	......	......	1	......	1
Toe	1	......	1	......	......	.....
Tooth	1	......	1	......	1	1
Vertebra, cervical	1	......	1	......	......	.....
Wrist	1	......	1	......	......	.....
186. Other external violence—						
I. Organs and special structures—						
Strain of muscle of:						
Abdomen	7	1	8	......	......	.....
Achilles tendon	2	3	5	......	......	.....

INFIRMARY REPORT, 1917–18—(*Continued*)

MEN AND WOMEN

Diseases	Dispensary Patients			House Patients		
	Men	Women	Total	Men	Women	Total
Ankle	1	2	3	......	......	......
Arch	16	4	20	......	......	......
Arm	2	1	3	......	......	......
Back	23	9	32	......	......	......
Chest	22	......	22	1	......	1
Finger	1	......	1	......	......	......
Foot	14	12	26	......	......	......
Hand	......	1	1	......	......	......
Heel	2	......	2	......	......	......
Knee	4	2	6	......	......	......
Leg	5	2	7	......	......	......
Neck	2	......	2	......	......	......
Sacro iliac	2	11	13	1	3	4
Sacro lumbar	4	2	6	......	......	......
Shoulder	13	2	15	......	......	......
Spine	......	1	1	......	......	......
Thigh	5	1	6	......	......	......
Toe	1	1	2	......	......	......
Wrist	......	3	3	......	......	......
Miscellaneous	1	1	2	......	......	......
II. Regions—						
Concussion of:						
Brain	3	1	4	1	1	2
Spine	......	1	1	......	......	......
Contusion and abrasion of:						
Abdomen	1	......	1	......	......	......
Achilles tendon	......	2	2	......	......	......
Ankle	8	2	10	......	1	1
Arm	14	2	16	1	......	1
Back	1	......	1	......	......	......
Buttock	1	......	1	......	......	......
Cheek	......	1	1	......	......	......
Chest	9	1	10	......	......	......
Chin	......	1	1	......	......	......
Ear	3	1	4	......	......	......
Elbow	12	4	16	......	1	1
Eye	2	2	4	1	......	1
Eyelid	3	......	3	......	......	......
Face	7	2	9	......	......	......
Finger	18	25	43	......	......	......
Foot	43	12	55	2	......	2
Hand	24	20	44	1	......	1
Head	4	......	4	......	......	......
Heel	13	31	44	......	1	1
Hip	2	......	2	......	......	......
Knee	44	21	65	3	1	4
Leg	15	2	17	1	......	1
Lip	4	1	5	......	......	......

INFIRMARY REPORT, 1917–18—(*Concluded*)

MEN AND WOMEN

Diseases	Dispensary Patients			House Patients		
	Men	Women	Total	Men	Women	Tot
Mouth	1	1	2	------	------	-----
Neck	3	1	4	------	------	-----
Nose	9	1	10	------	------	-----
Penis	1	------	1	------	------	-----
Rib	3	2	5	------	------	-----
Sacro iliac	------	1	1	------	------	-----
Scalp	2	------	2	2	------	
Thigh	5	2	7	------	------	-----
Toe	32	15	47	------	------	-----
Tongue	1	------	1	------	------	-----
Haematoma of knee	------	1	1	------	------	-----
Punctured wound of:						
Chest	------	1	1	------	------	-----
Chin	1	------	1	------	------	-----
Finger	1	------	1	------	------	-----
Foot	10	2	12	------	------	-----
Hand	3	1	4	------	------	-----
Foreign body of:						
Arm	------	1	1	------	------	-----
Ear	1	1	2	------	------	-----
Eyelid	------	1	1	------	------	-----
Finger	7	8	15	------	------	-----
Foot	5	1	6	------	------	-----
Hand	------	1	1	------	------	-----
Knee	------	1	1	------	------	-----
Throat	------	2	2	------	------	-----
Under finger nail	------	3	3	------	------	-----
Miscellaneous	------	1	1	------	------	-----
XIV. ILL-DEFINED DISEASES:						
189. Unclassified or ill-defined—						
(*a*) Disease not specified or ill-defined:						
Headache	20	58	78	1	3	4
Infection, unknown origin	------	2	2	------	1	1
Insomnia	6	11	17	------	1	1
Under observation for tuberculosis	------	------	------	------	1	1
(*b*) No disease; feigned disease..	44	49	93	11	5	16
No diagnosis	9	37	46	------	1	1

STATISTICAL ADDENDA

COMPILED BY THE RECORDER OF THE FACULTIES

ABLE 1.—Summaries of officers of instruction in the colleges at Berkeley, 1898–1918.

	Professors								
Year	Acting Profs.	Emer. Profs.	Assoc. Profs.	Asst. Profs.	Lectrs.	Instrs.	Dept. Assts.*	Teaching Fellows	Total
8–99	30	1	14	19	1	40	36	0	141
9–1900	29	2	15	20	2	40	40	5	153
0–01	31	2	14	19	2	41	45	2	156
1–02	29	1	13	22	5	56	43	0	169
2–03	34	1	12	26	14	64	48	4	203
3–04	36	2	14	42	14	51	60	3	222
4–05	39	1	16	48	16	45	86	3	254
5–06	37	3	18	51	14	55	82	3	263
6–07	40	3	19	57	14	46	94	3	276
7–08	44	3	22	59	12	47	104	4	295
8–09	50	3	28	62	14	53	100	6	316
9–10	55	8	23	70	14	52	118	7	347
0–11	47	10	29	64	14	57	75	7	303
1–12	48	9	42	57	18	81	110	9	374
2–13	55	8	38	61	17	77	121	16	393
3–14	72	6	33	82	16	87	114	14	424
4–15	73	10	43	95	20	83	169	16	509
5–16	68	10	50	78	20	83	168	26	503
6–17	71	10	47	83	25	83	178	24	521
7–18	84	8	53	88	28	85	224	24	594

*ncluding readers.

BLE 2.—Officers of instruction in the colleges and departments away from Berkeley.

				Medicine					
ar	L. O.	Art	Law	S. F.	L. A.	P. G. Medicine	Dentistry	Pharm.	Univ. Farm
–99	11	6	5	68	....	58	43	7	....
–1900	11	8	5	70	....	82	45	10	....
–01	12	8	5	68	....	94	45	9	....
–02	11	8	5	81	....	101	50	11	....
–03	12	9	5	50	....	109	46	10	....
–04	13	10	6	62	....	28	24	9	....
–05	13	9	6	55	....	23	25	8	....
–06	9	9	6	66	....	....	22	8	....
–07	7	....	6	52	....	....	34	9	....
–08	7	11	6	54	....	....	34	8	....
–09	8	7	6	54	....	....	31	8	....
–10	7	7	6	58	59	....	26	8	....
–11	16	9	6	55	61	....	32	8	10
–12	16	10	6	55	61	....	31	7	14
–13	17	12	6	53	58	....	24	9	....
–14	12	8	8	70	58	....	25	9	12
–15	14	8	8	80	145	....	25	8	23
–16	12	8	6	98	not reported	....	29	10	24
–17	14	13	8	142	121	....	37	7	29
–18	14	12	8	159	42	....	39	9	39

E.—Officers of instruction in the Hooper Foundation included in the S. F. Medical School.

TABLE 3.—Students in the several colleges, 1908–1918.

NOTE.—The upper figures on the left of each group refer to men, the lower to women; the figures on the right side are the totals. The following table does not include students in the following courses of instruction: University Extension, California School of Fine Arts, The University Farm School, Short Courses in Agriculture, Correspondence Courses, Farmers' Institutes, Wilmerding School of Industrial Arts.

In Berkeley:	COLLEGE OR SCHOOL	1908–09	1909–10	1910–1911	1911–12	1912–13	1913–14	1914–15	1915–16	1916–17	1917–18
Graduate Students:		186 217 403	214 211 425	258 243 501	311 267 578	344 304 648	404 303 707	459 373 832	535 477 1012	532 560 1092	377 530 907
Undergraduates:	Letters	39 98 137	35 116 151	59 113 172	64 104 168	69 107 176	71 105 176	79 114 193	*		
	Social Sciences	321 732 1053	341 768 1109	365 786 1151	342 796 1138	395 911 1306	462 1035 1497	575 1296 1871	1455 2232 3687	1586 2364 3950	1160 2599 3759
	Natural Sciences	177 104 281	230 170 400	349 260 609	454 408 862	566 511 1077	727 595 1322	746 591 1337			
	Commerce	186 4 190	222 2 224	258 5 263	263 5 268	282 5 287	282 14 296	298 13 311	310 30 340	363 27 390	273 87 360
	Agriculture	145 7 152	191 6 197	270 10 280	350 22 372	429 26 455	524 28 552	532 21 553	537 28 565	532 14 546	333 25 358
	Mechanics	293 0 293	301 0 301	294 0 294	316 0 316	318 0 318	366 0 366	361 0 361	345 0 345	328 0 328	234 0 234
	Mining	261 0 261	243 0 243	209 0 209	160 0 160	132 0 132	122 0 122	102 0 102	93 0 93	126 0 126	106 0 106
	Civil Engineering	246 0 246	232 0 232	236 0 236	234 0 234	224 0 224	261 0 261	234 0 234	196 0 196	168 0 168	117 0 117
	Chemistry	47 3 50	44 2 46	55 2 57	56 0 56	60 0 60	62 3 65	69 5 74	102 4 106	131 6 137	139 6 145
	At Large†	14 22 36	14 21 35	[38]† [30 68]	[29]† [36 65]	[23]† [37 60]	[44]† [46 90]	3 7 10	……	……	……
	Medicine (1st and 2nd years)	……	10 5 15	27 3 30	27 1 28	52 7 59	39 7 46	42 7 49	31 5 36	39 1 40	65 3 68
	Jurisprudence	……	……	……	……	……	……	……	67 2 69	83 6 89	42 7 49
	Total Undergraduates	1729 970 2699	1863 1090 2953	2122 1179 3301	2266 1336 3602	2527 1567 4094	2916 1787 4703	3041 2054 5095	3001 2285 5286	3356 2418 5774	2469 2727 5196
Total in the Colleges at Berkeley (deducting for duplicates)		1907 1176 3083	2067 1285 3352	2343 1403 3746	2539 1573 4112	2821 1846 4667	3285 2064 5349	3454 2394 5848	3491 2706 6197	3751 2944 6695	2765 3248 6013
Percentage of men, departments at Berkeley		61.85	61.66	62.55	61.74	60.44	61.41	59.06	56.28	56.02	45.98

	1908–09	1909–10	1910–11	1911–12	1912–13	1913–14	1914–15	1915–16	1916–17	1917–18
Lick Observatory, Mt. Hamilton:	3 0 3	1 1 2	1 1 2	2 0 2	0 0 0	0 0 0	2 0 2	2 0 2	4 0 4	0 1 1
In San Francisco:										
Hastings College of the Law	98 2 100	116 1 117	104 1 105	117 2 119	100 0 100	88 0 88	71 2 73	76 0 76	91 8 99	37 4 41
*Medical School (3rd and 4th years)	28 7 35	39 10 49	18 0 18	16 2 18	17 3 20	24 7 31	37 6 43	49 9 58	43 10 53	34 10 44
College of Dentistry	53 0 53	57 0 57	64 0 64	77 1 78	90 0 90	93 0 93	109 2 111	138 1 139	170 5 175	159 7 166
California College of Pharmacy	62 5 67	67 5 72	78 7 85	79 1 80	95 3 98	113 4 117	91 4 95	91 5 96	89 3 92	82 5 87
Total in the Colleges in San Francisco	241 14 255	279 16 295	264 8 272	289 6 295	302 6 308	318 11 329	310 14 324	354 15 369	393 26 419	312 26 338
In Los Angeles:	....	37 7 44	28 6 34	18 1 19	7 0 7	3 0 3	....	27 1 28	46 2 48	39 3 42
Total in the University (deducting for duplicates)	2127 1184 3311	2352 1301 3653	2631 1417 4048	2842 1579 4421	3128 1852 4980	3606 2074 5680	3764 2408 6172	3874 2722 6596	4190 2972 7162	3108 3239 6347
Summer Session, 1917	317 344 661	381 438 819	460 591 1051	562 1419 1981	676 1599 2275	783 1580 2363	982 2197 3179	1488 3876 5364	1190 2785 3975	868 3111 3979
Total	2444 1528 3972	2733 1739 4472	3091 2008 5099	3404 2998 6402	3804 3451 7255	4389 3654 8043	4746 4605 9351	5362 6598 11,960	5380 5757 11,137	3976 6350 10,326
Deduct for duplicate registrations in Summer Session and in Fall session following	109	189	245	293	220 183 403	299 218 517	324 289 613	431 355 786	423 391 814	300 450 750
Grand Total	3863	4283	4854	6109	3584 3268 6852	4090 3436 7526	4422 4316 8738	4931 6243 11,174	4957 5366 10,323	3676 5900 9576

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* Up to and including 1905-06 figures for Medical School include four classes; beginning 1906-07 only third and fourth years **are given**, figures for first and second years being included in "Students in Berkeley," graduate and undergraduate.

TABLE 4.—Showing proportion (per cent) of the undergraduates, including special students, in each of the colleges at Berkeley.

	1904–05	1905–06	1906–07	1907–08	1908–09	1909–10	1910–11	1911–12	1912–13	1913–14	1914–15	1915–16	1916–17	1917–18
Letters	8.70	7.70	5.70	5.05	5.07	5.11	5.21	4.66	4.30	3.74	3.80	†		
Social Sciences	41.06	41.84	41.87	42.14	39.01	37.52	34.86	31.60	31.90	31.83	36.72	67.82	68.57	72.15
Natural Sciences	7.65	7.58	8.82	8.42	10.41	13.54	18.45	23.93	26.31	28.11	26.24			
Commerce	5.06	5.71	6.14	6.78	7.03	7.50	7.96	7.44	7.01	6.30	6.11	6.25	6.77	6.42
Agriculture	4.29	4.88	5.07	5.05	5.63	6.67	8.48	10.33	11.11	11.74	10.85	10.39	9.47	6.88
Mechanics	10.77	10.59	10.53	9.96	10.85	10.19	8.96	8.82	7.77	7.78	7.09	6.35	5.69	4.50
Mining	11.54	10.75	10.93	10.65	9.67	8.22	6.33	4.44	3.22	2.59	2.00	1.71	2.18	2.04
Civil Engineering	8.38	8.37	8.74	9.58	9.11	7.11	7.14	6.49	5.47	5.55	4.59	3.60	2.91	2.25
Chemistry	2.51	2.14	1.67	1.49	1.85	1.55	1.72	1.55	1.46	1.38	1.45	1.95	2.37	2.78
Medicine	....	....	.30	.26	.55	.50	.09	.08	1.44	.98	.96	.66	.69	1.30
At large	....	....	....	.53	1.33	1.18	*[2.06]	*[1.80]	*[1.46]	*[1.91]	.19	....	....	....
Jurisprudence	....	....	....	....	....	....	....	....	....	....	....	1.27	1.35	.94

*In the above table, 1910–11 to 1913–14 inclusive, students at large are summarized separately, and are also distributed among the several colleges according to expressed collegiate preference.

†Beginning 1915–16, the colleges of Letters, Social Sciences, and Natural Sciences were merged into a single college of Letters and Science.

TABLE 5.—Summary of students registered to November 1 (approximately), 1909–1918.

	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918
*A. The colleges at Berkeley:										
(1) Graduate students in the colleges of letters and sciences (including engineering)	337	416	460	533	577	661	782	902	705	558
(2) Undergraduate students in the colleges of letters and sciences (including engineering)	2745	3033	3308	3753	4325	4629	4832	5140	4621	5189
Total	3082	3449	3768	4286	4902	5290	5614	6042	5326	5747
B. The colleges in San Francisco:										
(1) Law	112	102	116	97	79	72	71	93	33	41
(2) Medicine (3rd, 4th and 5th years only)†	11	16	18	19	31	45	58	60	43	57
(3) Dentistry	57	59	75	89	90	112	141	177	172	181
(4) Pharmacy	78	85	78	87	114	95	93	95	86	61
Total	258	262	287	292	314	324	363	425	334	340

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†Students in medicine, 1st and 2nd years, included in colleges at Berkeley:										
Graduate	13	10	16	24	42	28	27	39	42	46
Undergraduate	20	21	35	58	46	55	31	30	61	72
Total	33	31	51	82	88	83	58	69	103	118

* Colleges at Berkeley: Letters and Science, Commerce, Agriculture, Mechanics, Mining, Civil Engineering, Chemistry, Medicine (1st and 2nd years), Jurisprudence, Architecture.

TABLE 6A.—Graduate students at Berkeley, classified by college
November 1, 1918, with comparable figures for 1915, 191
and 1917.

NOTE.—In the columns showing the number of students, the upper left-hand figures ref
to men, the lower to women; the figures on the right side are totals.

	1915		1916		1917		1918	
Letters and Science	228		265		179		123	
	330	558	422	687	391	572	341	4
Commerce	3		5		4		1	
	2	5	0	5	2	6	1	
Agriculture	50		39		18		5	
	5	55	7	46	0	18	1	
Mechanics	5		8		3		4	
	0	5	0	8	0	3	0	
Mining	2		2		3		2	
	0	2	0	2	0	3	0	
Civil Engineering	6		2		2		2	
	0	6	0	2	0	2	0	
Chemistry	25		28		17		7	
	1	26	5	33	1	18	3	1
Medicine	22		26		39		41	
(1st and 2nd years)	5	27	4	30	3	42	5	4
Jurisprudence	80		76		35		15	
	6	86	6	82	6	41	5	2
Architecture	8		5		2		2	
	0	8	2	7	0	2	0	
Total	429		456		302		202	
	349	778	446	902	403	705	356	55

mately), 1917 and 1918.

NOTE.—In the columns showing number of students the upper left-hand figures refer to men, the lower to women; the figures on the right side are totals.

Colleges	Senior or 4th year				Junior or 3d year				Sophomore or 2d yr.				Freshman or 1st yr.				Special				Totals			
	1917		1918		1917		1918		1917		1918		1917		1918		1917		1918		1917		1918	
Letters and Science	209		95		224		131		281		258		295		711		22		21		1031		1216	
	458	667	444	539	493	717	546	677	619	900	661	919	765	1060	758	1469	71	93	51	72	2406	3437	2460	3676
Commerce	27		9		58		21		68		77		76		132		7		2		236		241	
	3	30	6	15	11	69	15	36	13	81	53	130	25	101	56	188	1	8	0	2	53	289	130	371
Agriculture	69		21		68		24		68		68		98		120		9		2		312		235	
	1	70	2	23	4	72	4	28	4	72	5	73	9	107	9	129	1	10	2	4	19	331	22	257
Mechanics	27		7		37		10		56		27		91		166		2		0		213		210	
	0	27	0	7	0	37	0	10	0	56	0	27	0	91	0	166	0	2	0	0	0	213	0	210
Mining	17		6		17		12		27		8		28		23		1		0		90		49	
	0	17	0	6	0	17	0	12	0	27	0	8	0	28	0	23	0	1	0	0	0	90	0	49
Civil Engineering	19		8		19		19		32		25		34		83		1		0		105		135	
	0	19	0	8	0	19	0	19	0	32	0	25	0	34	0	83	0	1	0	0	0	105	0	135
Chemistry	28		15		27		17		32		24		33		86		5		0		125		142	
	0	28	2	17	1	28	3	20	2	34	1	25	3	36	3	89	0	5	1	1	6	131	10	152
Engineering (unclassified)	.....	.....	12		.....	.....	25		.....	.....	56		.....	.....	210		.....	.....	2		.....	.....	305	
	.....	.....	0	12	.....	.....	0	25	.....	.....	0	56	.....	.....	0	210	.....	.....	1	3	.....	.....	1	306
Schools	.....	.....	.....	.....	.....	.....	.....	.....	9		14		51		55		.....	.....	.....	.....	60		69	
Medicine	.....	.....	.....	.....	.....	.....	.....	.....	0	9	0	14	1	52	3	58	.....	.....	.....	.....	1	61	3	72
	.....	.....	.....	.....	.....	.....	.....	.....	0		.....	.....	35		4		2		.....	.....	37		4	
Jurisprudence	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	5	40	1	5	0	2	.....	.....	6	43	1	5
	396		173		450		259		573		557		741		1590		49		27		2209		2606	
Totals	462	858	454	627	509	959	568	827	639	1212	720	1277	808	1549	830	2420	73	122	55	82	2491	4700*	2627	5233*

*Net Total..............4621..........5189

Deduct for duplicates as follows:

1917

Letters and Science and Medicine.........37

1 38

Letters and Science and Jurisprudence 34

6 40

Commerce and Jurisprudence 1

0 1

72

7 79

2137

2484

Net Total...4621

1918

Letters and Science and Medicine 36

3 39

Letters and Science and Jurisprudence 4

1 5

Commerce and Jurisprudence................. 0

0 0

40

4 44

2566

2623

Net Total 5189

TABLE 7.—Degrees conferred, 1910–1918.

DEGREE		1910	1911	1912	1913	1914	1915	1916	1917	1918
LL.D.		9 0 9	0 0 0	5 0 5	5 0 5	4 0 4	4 0 4	2 0 2	2 0 2	14 0
J.D.		7 1 8	8 1 9	10 1 11	11 1 12	15 1 16	18 2 20	22 0 22	27 2 29	3 2
Ph.D.		4 1 5	5 1 6	13 2 15	9 2 11	11 2 13	22 4 26	22 0 22	32 3 35	12 3
M.A.		7 11 18	5 12 17	4 20 24	6 16 22	12 26 38	43 46 89	48 65 113	49 74 123	28 53
M.L.		7 16 23	5 16 21	9 15 24	6 14 20	13 28 41	... ...	... ...	... ...	... ...
M.S.		20 5 25	27 8 35	26 9 35	43 13 56	41 18 59	20 5 25	31 3 34	13 2 15	8 3
Grad. in Arch.		...	...	...	...	2 0 2	3 0 3	1 0 1	1 0 1	0 0
Grad. in Publ. H.		...	...	...	...	0 0 0	4 1 5	0 0 0	1 0 1	0 1
Gr. in Educ.		...	...	...	...	...	...	...	1 0 1	1 0
E. E.		...	...	...	...	...	...	...	1 0 1	0 0
Met. E		...	...	...	...	...	...	...	...	1 0
Min. E.		...	...	...	...	...	...	...	...	1 0
Number of higher degrees		54 34 88	50 38 88	67 47 114	80 46 126	98 75 173	114 58 172	128 68 196	127 81 208	68 62 1
A.B.		8 31 39	7 26 33	11 25 36	23 24 47	11 24 35	201 310 511	257 331 588	226 357 583	151 453 6
B.L.		49 108 157	41 113 154	42 114 156	54 122 176	111 171 282	... ...	... ...	... ...	... ...
B. S.	Nat. Sci.	34 20 54	37 34 71	70 61 131	80 65 145	56 64 120	5 11 16	... ...	... ...	... ...
	Commerce	22 1 23	22 1 23	21 0 21	32 0 32	27 0 27	37 3 40	39 1 40	46 2 48	13 2 1
	Agricult're	21 3 24	22 0 22	40 0 40	45 3 48	67 4 71	74 5 79	78 2 80	102 0 102	40 3 4
	Mechanics	45 0 45	26 0 26	36 0 36	30 0 30	47 0 47	41 0 41	38 0 38	39 0 39	12 0 1
	Mining	27 0 27	44 0 44	26 0 26	25 0 25	25 0 25	15 0 15	13 0 13	14 0	5 0
	Civil Eng.	27 0 27	24 0 24	31 0 31	31 0 31	30 0 30	33 0 33	32 0 32	38 0 38	14 0 1
	Chemistry	5 1 6	9 0 9	7 0 7	11 0 11	7 0 7	13 1 14	4 1 5	13 0 13	10 0 1
Number of bachelor's degrees		238 164 402	232 174 406	284 200 484	331 214 545	381 263 644	419 330 749	461 335 796	478 359 837	245 458 7
LL.B.		23 0 23	19 0 19	28 1 29	22 0 22	30 0 30	18 0 18	8 0 8	16 0 16	6 0
*M.D.		7 4 11	5 1 6	10 1 11	11 1 12	11 3 14	12 1 13	25 4 29	22 4 26	0 0
D.D.S.		16 0 16	10 0 10	15 0 15	20 0 20	23 0 23	19 0 19	29 0 29	38 1 39	32 0
†Ph.G.		27 2 29	30 2 32	31 0 31	28 2 30	41 2 43	36 1 37	27 2 29	31 1 32	22 3
Pharm.B.		1 0 1	3 1 4	2 0 2	0 0 0	1 0 1	1 0 1	2 0 2	0 0 0	0 0
Ph. C.		...	...	...	...	...	...	...	2 0 2	3 1
Number professional degrees		74 6 80	67 4 71	86 2 88	81 3 84	106 5 111	86 2 88	91 6 97	87 2 89	63 4

† Ph.G. discontinued and replaced by Ph.C. between 1905 and 1911 inclusiv
Beginning 1915, Ph.C. was given for completion of four-year course.

* M.D. not conferred, Commencement, 1918, on account of the transition from th
four-year to the five-year curriculum.

‡ Figures for 1918, as for the other years represented in this table, include degre
conferred in December.

TABLE 8.—Number of accredited schools each year since 1888.

	1888–89	1889–90	1890–91	1891–92	1892–93	1893–94	1894–95	1895–96	1896–97	1897–98
Number public high schools accredited	7	11	17	24	30	39	43	52	61	66
Number private secondary schools accredited	2	2	6	7	10	9	14	15	15	16
Total number schools accredited	9	13	23	31	40	48	57	67	76	82

	1898–99	1899–1900	1900–01	1901–02	1902–03	1903–04	1904–05	1905–06	1906–07	1907–08
Number public high schools accredited	76	87	93	93	100	104	99	106	114	122
Number private secondary schools accredited	15	23	23	22	18	20	21	23	23	25
Total number schools accredited	91	110	116	115	118	124	120	129	137	147

	1908–09	1909–10	1910–11	1911–12	1912–13	1913–14	1914–15	1915–16	1916–17	1917–18
Number public high schools accredited	140	147	155	172	181	192	189	191	248	256
Number private secondary schools accredited	30	31	31	31	32	34	36	36	53	60
Total number schools accredited	170	178	186	203	213	226	225	227	301	316

NOTE.—Schools authorized to recommend though not regularly accredited: 1909-10, 34; 1910–11, 26; 1911–12, 35; 1912–13, 40; 1913–14, 45; 1914–15, 53; 1915–16, 49.

The summary for 1917–18 includes 60 public and 28 private schools in Division B of the accredited list; the continued accrediting of schools in Division B is rendered uncertain by undeveloped organization, inadequate resources, or other causes.

TABLE 9.—Enrollment of graduate students.

	1907–08	1908–09	1909–10	1910–11	1911–12	1912–13	1913–14	1914–15	1915–16	1916–17	1917–18
Total number of graduate students (duplicates deducted)	324	403	425	501	578	648	707	832	1014	1092	907
Number from University of California	177	236	214	258	307	342	371	424	431	563	487
Percentage of graduate students from University of California	54.6	58.5	50.3	51.4	53.1	52.8	52.3	51.0	53.7	55.5	53.03
Percentage of graduate students from other institutions	45.4	41.4	49.6	48.5	46.9	47.2	47.7	49.0	46.3	44.5	46.97
Total number of colleges and universities represented	81	90	98	120	122	152	146	168	207	175	193
*Number of graduate students taking higher degrees (masters' and doctors' degrees not including juris doctor)	49	61	66	79	99	103	149	149	172	168	133
Percentage of graduate students taking higher degrees (masters' and doctors' degrees not including juris doctor)	15.1	15.1	15.5	15.7	17.1	15.9	21.1	17.9	16.9	15.4	14.66
Number of graduate students receiving Ph. D.	4	10	5	6	15	10	14	22	22	33	17
Number of graduate students receiving the bachelor's degree	3	7	8	7	7	10	7	3	6	3	2
Number of graduate students taking juris doctor in the academic departments	6	7	6	8	13	11	16	20	22	30	5

*In 1914–15, 1915–16, and 1916–17 includes Degrees of Graduate in Architecture, Graduate in Education, Graduate in Public Health, and Electrical Engineer.

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SUPPLEMENT

TO THE

ANNUAL REPORT

OF THE

PRESIDENT OF THE UNIVERSITY

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FOR THE

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(December 21, 1918)

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HOWE, L. P., Instructor in Surgery; Major, M.C., A.E.F., France.

HUTCHINSON, LINCOLN, Professor of Commerce on the Flood Foundation; Captain, Q.M.C., doing special work for the War Industries Board in England and France.

HYDE, C. G., Professor of Sanitary Engineering; Major, Sanitary Corps.

JONES, L. T., Instructor in Physics; Captain, Air Service.

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LAGILLE, H. B., Assistant Professor of Machine Design and Mechanical Drawing; Lieutenant, Naval Unit, University of Southern California.

LEGGE, R. T., Professor of Hygiene and University Physician; Captain, M.C.

LEUPP, H. L., Associate Librarian; Captain, Infantry, Camp Lewis.

LEUSCHNER, A. O., Professor of Astronomy and Director of the Students' Observatory; Major, Chemical Warfare Service.

LEWIS, C. I., Assistant Professor of Philosophy; Second Lieutenant, C.A.C., Fort Monroe, Virginia.

LEWIS, G. N., Professor of Physical Chemistry and Dean of the College of Chemistry; Lieutenant-Colonel, Chemical Warfare Service, A.E.F., France.

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MARSHALL, J. A., Assistant Professor of Biochemistry and Dental Pathology; Captain, Ordnance Department.

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NEWTON, R. F., Assistant in Chemistry; Second Lieutenant, Artillery, A.E.F., France.

OLSON, A. R., Assistant in Chemistry; First Lieutenant, Chemical Warfare Service, A.E.F., France.

PERNOT, F. E., Assistant Professor of Electrical Engineering; Captain, Signal Corps.

PHLEGER, H. H., Lecturer in Law; Lieutenant, Junior Grade, U.S.N.

POPE, A. U., Assistant Professor of Philosophy; Captain, Commissioned Personnel Branch, Office of the Chief of Staff, Washington, D. C.

POWELL, ALVIN, former Physician for Men and Roentgenologist; Lieutenant-Colonel, Air Service, France.

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STABLER, W. H., Assistant in Veterinary Science; First Lieutenant, Sanitary Corps.

SMYTH, H., Assistant in Urology; First Lieutenant, Base Hospital No. 30, France.

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Turner, L. M., Assistant Professor of French; First Lieutenant, Intelligence Department, France.

Uren, L. C., Assistant Professor of Mining; Captain, Chemical Warfare Service.

Vanleer, B. R., Instructor in Mechanical Engineering; Second Lieutenant, Engineers.

Visalli, Joseph, Assistant in Surgery; Assistant Surgeon, U.S.N.

Voorhies, E. C., Assistant Professor of Animal Husbandry, Davis; First Lieutenant, Light Artillery.

Vosberg, Keith, former Assistant in History; First Lieutenant, Hospital Corps, A.E.F., France.

Wadsworth, H. A., Assistant in Irrigation Investigations; Engineers, A.E.F., France.

Weeks, Alanson, Assistant Clinical Professor of Surgery; Major, M.C., Base Hospital No. 30, France.

Whitney, J. L., Assistant Clinical Professor of Medicine; Major, M.C., Camp Hospital No. 14, France.

Wills, C. A., Voluntary Assistant in Surgery; Captain, M.C., Base Hospital No. 47, France.

Woolsey, J. H., Assistant in Surgery; First Lieutenant, M.C., Base Hospital No. 30, France.

Wright, H. N., Assistant in Neurology; First Lieutenant, M.C., Base Hospital No. 30, France.

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SCHOOL OF MILITARY AERONAUTICS

The School of Military Aeronautics at Berkeley is conducted by the University of California for the United States Army under a contract by which the University receives a specified tuition fee for each cadet receiving instruction. The University provides instructors, all necessary buildings for barracks and instructional purposes, and laboratory equipment, except special equipment such as airplanes and engines furnished by the United States Army.

The original contract, made in May, 1917, was for one year; a new contract is under consideration and will be signed shortly.

The Army is represented by the Commandant, who is in direct charge of the cadets and is the head of the school.

The University exercises its control through an executive head known as the President of the Academic Board. This official is directly responsible to the President of the University and to the Commandant of the School. Assisting the President of the Academic Board are a Vice-President, a Board of Examiners, and the following standing committees: Budget, Equipment and Buildings, Publications, and Schedule and Curriculum.

The course of instruction is prescribed by the United States Army. The course of eight weeks was increased in March, 1918, to twelve weeks. The curriculum has been changed from time to time by the authorities in Washington. At present there are six departments: Military Subjects, Signalling, Gunnery, Airplanes, Engines, and

Observation. Each department follows a course definitely prescribed as to the number of hours devoted to each topic and as to the scheduling of work throughout the twelve weeks.

Following is a list of the administrative officers, standing committees, and heads of departments on duty at the school:

Administrative Officers

Commandant
  George B. Hunter,
    Lieutenant Colonel, Signal Corps, United States Army.

Adjutant
  Charles B. Crane,
    Captain, A. S., Sig. R. C.

Detachment Commander
  W. C. Brady,
    Captain, A. S., Sig. R. C.

Supply Officer and Quartermaster
  Jacob Mary,
    2nd Lieut., A. S., Sig. R. C.

Post Surgeon
  Bruno F. Sandow,
    Captain, Med. R. C.

Assistant Post Surgeon
  Jesse C. Edwards,
    1st Lieut., A. S., Sig. R. C.
  Albert S. Gough,
    1st Lieut., A. S., Sig. R. C.

Post Dental Surgeon
  G. F. Stoodley,
    1st Lieut., Dental R. C.

Summary Court
  Harold B. Reed,
    1st Lieut., A. S., Sig. R. C.

President of the University
  Dr. Benj. Ide Wheeler.
President of the Academic Board
  Dr. Baldwin M. Woods.
Vice-President of the Academic Board
  Mr. G. M. Thomas.

Standing Committees

Board of Examiners:
  Prof. B. F. Raber, President.
  Lieut. R. J. Heffner.
  Mr. Walter Dreyer.
Equipment and Buildings:
  Prof. B. F. Raber, Chairman.
  Mr. R. A. Waite.
Publications:
  Mr. H. A. White, Chairman.
  Mr. G. M. Thomas.
  Lieut. A G. Smith.

Schedule and Curriculum:
  Mr. G. M. Thomas.
  Lieut. D. J. Conant.
Budget:
  Lieut. H. L. McLean, Chairman.
  Mr. G. M. Thomas.
  Mr. R. M. Underhill, Accountant.

Heads of Departments

Military Subjects
  Roy J. Heffner, 1st Lieut., A. S., Sig. R. C.
Signalling
  Robert B. McPherson, 1st Lieut., A. S., Sig. R. C.
Gunnery
  Mr. G. R. McDonald.
Airplanes
  Howard L. McLean, 2nd Lieut., A. S., Sig. R. C.
Engines
  David J. Conant, 2nd Lieut., A. S., Sig. R. C.
Observation
  Mr. R. A. White.

Finances

Shortly after the formation of the school in May, 1917, a Budget Committee was appointed to keep the President of the Academic Board informed on finances.

The principal part of the accounting is done by the Accounting Department of the University. The Budget Committee makes monthly reports showing:

1. Receipts and disbursements from the opening of the school to the date of the report.

2. Receipts and disbursements for the month of the report.

3. An estimate of receipts and expenditures for the coming month, divided according to accounts and departments.

The cost of permanent improvements for the duration of the war, such as barracks and laboratory buildings, is charged off in monthly installments extending over periods ranging from six months to a year. Three laboratory buildings and five barracks have been built since the establishment of the school.

Buildings and Equipment

The University has constructed laboratory buildings for the School of Military Aeronautics on the campus near the Mechanics Building. The first building constructed was 60 × 120 feet and provided sufficient space for laboratories essential in the study of signalling, gunnery, airplanes, engines, and aerial observation. As the size of the school increased the building became inadequate, and it was necessary to make two additions to the original structure. It also has been necessary to construct an engine laboratory on another part of the campus. For lecture purposes, the rooms of the regular University buildings have been placed at the disposal of the School of Military Aeronautics.

At the opening of the school, cadets were quartered in fraternity and boarding houses near the campus. The University at once undertook the construction of barracks, and there is now available one large two-story building just south of the campus and four smaller units on the campus, the last four units being of similar construction. Space for any future increase will be provided by building additional units of the same type as the four smaller barracks.

Department of Military Subjects

Lieutenant R. J. Heffner, Head

The Department of Military Subjects has been in operation since the opening of the school in May, 1917. At that time the work of the department covered four lecture hours per week, given by one instructor, and divided into three topics: Army Regulation, Military Law, and Organization of Modern Foreign Armies.

In July, 1917, the staff of the department was increased to two instructors. A total of sixteen hours per week and a final examination at the completion of the series of lectures were provided. The scope of the course was enlarged to include one lecture each on the organization of the United States, German, British, and French armies. Since that time instructors and lectures have been continually added. Both the topics discussed and the number of hours devoted to each have been increased.

At the close of last year a total of twenty-eight hours of work per week was provided for in the curriculum, including a final examination and lectures on Organization of the Schools of Aeronautics, Military Law, Military Discipline, Esprit de Corps, Military Courtesy and Ideals, Administration and Organizaton of the Unted States Army, Regulations of the United States Army, Military Hygiene, Sanitation and First Aid, Army Paper Work, Methods of Modern Warfare, and Morale of the Air Service.

In March, 1918, the number of hours of work per week was virtually doubled, and at present reaches a total of fifty-four hours. The course includes lectures, demonstrations and examinations. The following brief outline of the present instruction may prove of interest:

The subjects of Military Hygiene, First Aid and Sanitation are discussed and demonstrated in a series of seven lectures. Elementary principles of personal hygiene, communicable diseases, camp and barracks sanitation, emergency treatment for the injured, etc., are explained.

Military Discipline receives but one hour in the lecture room, but its principles are practiced throughout the entire course of twelve weeks.

Military Courtesy is discussed in a series of two lectures. Rules for saluting, honors and courtesies to the colors and the national anthem, etc., are explained and emphasized.

The principles of Guard Duty are brought out in two lectures.

The subject of Administration and Organization of the United States Army is taken up in brief synoptical form, three hours being given to such discussion.

The Paper Work of the Army, including military correspondence, blank forms, requisitions, accounts, reports, etc., receives attention, ten hours being devoted to lectures, discussions and practice.

Army Regulations governing both officers and enlisted men are studied.

Military Law and the Articles of War, including the system of military tribunals, courts and commissions, is discussed in a series of lectures covering five hours. At the completion of this series the students themselves hold a mock court-martial for practice in legal work.

Methods of Modern Warfare, including construction of trenches, service in the trenches, methods of attack and defense on European battle fields and organization of modern foreign armies are discussed in a series of four lectures. Seven hours of discussion and drill in the use of gas masks give the student elementary instruction in defense against gas attacks.

One hour is spent in discussing the elementary principles and benefits of infantry drill as practiced by members of the Aviation Service. The proper methods of giving commands as well as general theories of drill movements are explained. This is coördinated with the practical work on the drill field.

In the last lecture the subject of Morale in the Air Service is discussed with an idea of building up pride in the organization, faith in its progress and powers and general satisfaction among its members.

Eleven instructors are connected with the department. Students are furnished with sets of notes mimeographed in skeleton form and are instructed to fill in details from the material presented in the lecture room. In this manner a logically arranged set of notes is assured the student, who is given the opportunity of assimilating the information through the act of writing it himself, rather than reading it from a text. Each week sees changes and improvements in accordance with the policies of the War Department.

The practical work in the Department of Military Subjects, consisting of drill, guard mount, etc., although listed under this department is actually conducted separately, under the direction of Lieutenant Harold B. Reed as the Department of Drill and Discipline.

Department of Signalling

Lieutenant R. B. McPherson, Head

The Department of Radio and Signalling was organized as a part of the school in May, 1917, for the purpose of instructing cadets in radio telegraphy, and the Radio Laboratory of the College of Mechanics was turned over for its use. First practice in signalling was given in one of the fraternity houses, where the cadets were quartered at the beginning of the school.

The name of the department was later changed to the Department of Signalling, although the scope of the course remained practically the same. Practice in sending and receiving the International Morse Code occupies most of the time of the cadets. This work is given on silent code practice apparatus which permits several hundred students to have simultaneous individual practice time without any interference.

The signalling laboratories are located in the ''aero'' laboratory and the barracks units built by the University, the laboratory in ''C'' barracks being large enough to accommodate 240 men doing individual work at the same time. Sufficient apparatus is available at the barracks for the cadets to engage in a certain amount of night practice in addition to the regular work required in the daily curriculum.

The course also includes lectures on the theory of wireless telegraphy and several hours are devoted to visual signalling.

As the size of the school has been increased it has been necessary to increase the staff from month to month and it is believed that the efficiency of the department has more than kept pace with its growth.

Department of Gunnery

Lieutenant G. R. McDonald, Head

The Department of Gunnery is intended to fit the cadet for the advanced training which he is given at the flying field. The curriculum followed is based on the experience gained by the Allies, the cadet being taught to use the machine gun effectively as a weapon of offense and defense. Special attention is given to work in the laboratory, as the aerial gunner must possess a fair amount of skill as an armorer. This qualification enables him to keep his gun in action under the most trying conditions, where the inability successfully to reduce a jamb would be fatal.

Laboratory work covers practice in the dissembling and assembling of the various guns as well as the removal and replacement of important parts of the gun mechanism. After the work is understood the adjustment and manipulation of the fully assembled gun is practiced. This is followed in a systematic manner until the cadet, even when blindfolded, is able to perform any operation which the instructor may direct. This is the final proof of a knowledge of the gun mechanism, and insures against the fumbling or maladjustment of parts when working under adverse conditions.

The training in the laboratory is supplemented by firing practice on the range where attention is paid to marksmanship in handling of the gun. Trap shooting is a valuable adjunct to this work, as the prospective aerial gunner thereby develops facility in judging accurately when firing at a swiftly moving target. An interesting feature of the firing practice is the drill in correcting stoppages and jambs. By applying the knowledge gained in the laboratory and in firing practice he is able to diagnose the trouble and put the gun in action.

Space for this work is provided in the temporary buildings erected for the School of Military Aeronautics on the campus, and on the range back of the Big "C". Machine guns and accompanying material of the same pattern as the Allies are using at the front, enable the cadets to gain the experience needed to make them practical gunners.

Trap shooting, although included under Organized Sports, is conducted by the Department of Gunnery.

Airplane Department

Lieutenant H. L. McLean, Head

When the School of Military Aeronautics started in May, 1917, the Airplane Department was housed in one end of the original Aeronautics Laboratory. Two obsolete training machines were used for instruction in alignment and a few lectures were given in Theory of Flight, Slicing, Care and Types of Machines.

The department has gradually grown until it is the exclusive occupant of one building, in addition to a large part of the original building and annex. Eight airplanes are in use for instruction purposes, two being of the very latest type of training machine. A repair laboratory has also been fitted up where cadets are given practical instruction in making wire splices of different kinds and in patching punctured and torn wings.

Lectures are given, forty-eight hours in all, on the Theory of Flight, Repair and Care of Airplanes, Instruments, Meteorology, and Types of Airplanes at present in use.

The faculty of the department at the present time is composed of ten instructors, with three more to report within the next few weeks.

Engines Department

Lieutenant D. J. Conant, Head

The Engines Department began its instruction in June, 1917, the curriculum consisting of a series of lectures with a laboratory course. The lectures covered the use of tools, fundamental principles of airplane engines, the theory and operation of carburetors and magnetos, lubrication and cooling systems. In the laboratory the cadets were divided into groups of eight, each group having an instructor who illustrated the details of construction, operation, and adjustment of two makes of airplane engines.

At first the staff consisted of three members, but with constant changes in the curriculum and the addition of new equipment and engines, more instructors had to be secured. A number of large colored charts and working models of parts of engines were made by members of the staff and were used extensively in the class rooms.

When it became necessary to run the airplane engines, they were mounted on special stands outside of the building. The troubles experienced in engine operation were observed, the cadets studying the causes of the difficulties and learning how to remedy them.

The new curriculum, a twelve weeks' course, gives the Engines Department a broader field of activity. ·The new course requires work in assembling and disassembling of engines, their testing, and the careful consideration of the care and operation of engine accessories. The increased duties of the department required a larger number of engines and equipment and it became necessary to erect a new building. Nine test stands and eight work rooms for assembling and disassembling, besides a small shop for the mainteanance of the engines and the tool equipment were provided.

The engine equipment totals twenty-four complete engines and the parts of two others. The staff comprises fifteen instructors.

Department of Observation

R. A. Waite, Head

The work in the Department of Aerial Observation, as it was called in May, 1917, consisted of lectures and practice in Map Reading, and lectures on Coöperation of Airplanes with Artillery, Coöperation of Airplanes with Infantry (or Contact Patrol), Reconnaissance, and Aerial Photography. The miniature range, or the artillery observation range, was built for the practical work in this department, principally in connection with the course on Coöperation of Airplanes with Artillery.

Until January, 1918, all instruction in this department was taken directly from present day British methods. After January the modern French system was substituted. In October, 1917, the course in Map Reading was taken from this department to form the basis for a new Department of Aids to Flight. Lectures on Theory of Flight, Cross-country Flying, Meteorology, Night Flying, Astronomy, and Instruments comprised the remainder of the work in this department. In January, 1918, the new miniature range, capable of accommodating seventy-two men, was put into operation and the old range, with a capacity of twenty-six men, was abandoned.

In May, 1918, following a very material change in the work, the name of the department was changed to Observation. The lectures on Coöperation of Airplanes with Artillery and the practice work on the miniature range were increased. The lectures on Coöperation of Airplanes with Infantry and Reconnaissance were eliminated. The lectures on Aerial Photography were reduced to two lantern slide lectures covering the interpretation of aerial photographs. The work in Map Reading was increased slightly and again brought under the Department of Observation. The work that had been given in the Department of Aids to Flight was either eliminated or transferred to other departments.

The activities of the Department of Observation now cover Map Reading, lectures and practice, including the interpretation of aerial photographs; Coöperation of Airplanes with Artillery, and lectures and practical work on the artillery observation range.

The artillery observation range, or miniature range, was adopted in the aviation ground schools to provide some practical means of aerial observation. The general method was taken from the British ground schools, but the manner of working out the details and of giving instruction differs in each of the various ground schools in this country.

The essential feature of the range is a painting of a certain section of country as it would appear from an airplane. The painting is made on canvas, sized to render it translucent, and is taken from a certain section of the artillery map furnished each cadet. The scale is such as to present to the eye of the observer in the gallery sixteen feet above it, the same appearance as the actual country from a height of about eleven thousand feet.

There are two balconies extending around the room, the upper one being the observers' gallery and the lower one the battery commanders' gallery. There are seats for thirty-six men in each gallery, thus making it possible for two instructors to supervise a class of seventy-two men, working in pairs. Communication between two men working together as observer and battery commander is established through imitation wireless sets. The observer may receive messages by head telephone, signal lamp or by miniature ground-strips, the battery commander receiving always by head telephone.

In the floor are set about five hundred small electric lights. Some of these illuminate numerals which represent definite points for the observer to locate and report. Others are points of light representing bursting shells around the thirty-six targets, one for each battery table. The latter, or "bursts," are controlled by switches on the battery table, which the battery commander can operate when the signal to fire is given by his observer. The observer then estimates the correction for this burst and signals it to the battery commander by wireless. In this way practice is given in estimating corrections for artillery fire, and later, in conducting shoots.

Department of Organized Sports

F. L. Kleeberger, Director

General Statement.—The work of the Department of Organized Sports of the School of Military Aeronautics has been under way during the past four months. From the very beginning a definite plan of organization of athletic activities has guided the work of this department. Due to the curtailment of the time originally allotted for athletic sports, and due to the frequent readjustment of the curriculum of the School of Military Aeronautics, the work so far has been in a state of experimentation from the standpoint of detailed procedure. Throughout the organization and administration of the athletic work the principles originally presented by General Squier have been kept constantly in mind. It has been the aim of the Department of Organized Sports to provide athletic activity which would react on the men of the school in the maintenance of health, in the promotion of recreative values and in the development of physical cleverness. The work is expected to prove of practical value to fighters in meeting the exigencies of their future work. Care has also been exercised to provide types of group competition which might prove conducive to the development of group loyalty, esprit de corps and personal morale.

Organization of Athletics.—Squadrons A to O, inclusive. Boxing drills and wrestling drills. Individual competition, each corporal forming his squad into a ring and pitting his men one against the other in rotation, grading each man upon his individual efficiency. Each squad, through this process, to determine the two boxers who are to represent it in the intersquad and intersquadron competition to be arranged each week. Efficiency of the individual to be graded by the corporal in connection with the athletic instructor.

Squadrons E and F. Agility training through individual and team participation in competitive games, relay racing, wall scaling, practice in lifting and carrying injured or helpless persons, hand wrestling, tug-of-war, etc. Efficiency of the individual to be graded by the corporal in consultation with the athletic instructor. Intersquad and intersquadron competition to be arranged for each week.

Squadrons G and H. Track and field training. Groups to be kept in military units (squads, platoons, etc.), during the practice of running, jumping, hurdling, vaulting, grenade throwing, etc. Individual competition within each squad under the direction of the corporal to determine the representative for the intersquadron field and track meet, based upon six events: high jump, broad jump, hand vault, grenade throw, hurdle race, and short dash. (The competition will also include a relay race.) Efficiency grading of each individual by the squad leader in consultation with the athletic instructor.

Squadrons I to M, inclusive. Trap shooting on a range constructed by the University on the hills back of the Big "C." Each squadron has two two-hour periods at the traps and in addition has one hour scheduled for a "hike" through the hills followed by a plunge in the swimming tank or shower at the gymnasium. Trap shooting, although included under supervised sports, is conducted by the Department of Gunnery.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS

The total enrollment in the Department of Military Science and Tactics in August, 1917, was 1265 (47 officers and 1218 non-commissioned officers and privates). As a result of the selective draft and voluntary enlistment, by April 29, 1918, but 38 officers and 810 non-commissioned officers and privates remained.

Under General Order No. 49 of the War Department there was established at the University of California a unit of the Senior Division of the Reserve Officers' Training Corps, in charge of Captain L. M. Welch, Professor of Military Science and Tactics. Graduates of the Senior Division were eligible to enter officers' training camps. Students, if under twenty-one years of age, were required to attend the summer camps provided by the government.

The prescribed amount of military work has been three hours a week. This will be increased materially under the new Students' Army Training Corps plan of the War Department. A unit of this corps will be established at the University of California.

SCHOOL OF VOCATIONAL TRAINING

With approximately 100 men assigned for service, the School of Vocational Training opened at the University of California on July 1, 1918, under the command of Captain A. H. Allen, former Manager of the University Press, assisted by Lieutenant A. W. Mohr. Four University instructors are training the recruits in telegraphy, radio, blacksmithing and electrical machinery. F. S. Foote, Jr., Professor of Railroad Engineering; W. C. Pomeroy, Assistant in Physics, H. A. Scott, and G. W. Cattell, comprise the faculty, while the following former students of the University are included in the new school: W. V. Atkinson, C. S. Capp, B. C. Harris, J. G. Larson, J. S. Moore, Jr., P. Prell, H. F. Rohrbach and J. Wimmer.

TRAINING FOR THE UNITED STATES NAVY AND FOR THE MERCHANT MARINE

At San Francisco

Courses contributing to the training of men desiring to qualify as officers in the United States Naval Forces and in the Merchant Marine were inaugurated during the summer of 1917 by the Berkeley Astronomical Department and the Committee on Mathematical and Astronomical Investigations of the Pacific Coast Research Conference of the State Council of Defense. These courses led to an active and effective coöperation of the University with the United States Shipping Board and the United States Navy. A course in Navigation and Nautical Astronomy, principally designed to produce a supply of qualified teachers, was included in the Summer Session of 1917, under F. J. Neubauer, Instructor in Astronomy.

In the meantime these plans, through the National Research Council, were brought to the attention of the United States Shipping Board, Mr. Henry Howard of Boston, Director of the Shipping Board's Recruiting Service and founder of its Navigation Schools, and Dean Alfred E. Burton of the Massachusetts Institute of Technology, Special Expert of the Shipping Board in charge of instruction, who had decided to extend the Shipping Board's chain of Navigation Schools to the Pacific Coast.

Mr. Farnham P. Griffiths, an alumnus of the University and Lecturer in Law in the School of Jurisprudence, was appointed Section Chief of the Recruiting Service in California, to have complete charge of the Shipping Board's Navigation Schools in California. In August, 1917, plans for the coöperation of the Berkeley Astronomical Department and the University Extension Division with the Shipping Board were completed. Suitable quarters had been secured from the State Harbor Commissioners in the Ferry Building for the housing of the Navigation School of the

Shipping Board in San Francisco, of the Navigation School to be conducted by the Extension Division, and of the Navigation School of the City and County of San Francisco. The Harbor Commissioners, the San Francisco Board of Education, and the Extension Division shared in the expense of outfitting the quarters.

The following instructors, all present or former members of the University, were appointed by the Shipping Board to serve in various Pacific Coast navigation schools: F. J. Neubauer and Sturla Einarsson, Instructors in the Berkeley Astronomical Department, for San Francisco; H. D. Curtis, Astronomer in the Lick Astronomical Department, for San Diego; W. F. Meyer, in charge of the International Latitude Observatory of the U. S. C. G. S., formerly Instructor in the Berkeley Astronomical Department, for San Pedro; A. R. Williams, Assistant in Mathematics, for Portland, Oregon; and C. D. Shane, Fellow in the Lick Observatory, for Bellingham, Washington. Captain George Harding was appointed to complete the staff of the San Francisco School.

Within three days after these arrangements were perfected instruction commenced at San Francisco, San Diego and San Pedro, and a week later at the more distant places. The original arrangements provided that in return for the University's coöperation, Extension Division students without sea experience should receive free instruction in the Shipping Board's classes, to increase the number of each class to thirty, as it was not expected that enough certified applicants with sea experience would be immediately available. From the start, however, the response of men with and without sea experience was so large that it became necessary to organize separate classes for the Extension Division. The University Extension Division opened free day and night classes in Navigation and Nautical Astronomy, conducted in the Ferry Building, San Francisco, on September 11, 1917. The courses were under the general supervision of A. O. Leuschner, Director of the Students'

Observatory, and in charge of Dr. Neubauer and Captain George Harding. Thirty-nine students took the day course. Twenty-two successfully completed it, fifteen with the highest record possible. Ten other extension students completed the course, by courtesy of the Shipping Board, in one of the government classes. Many of these thirty-two students secured appointments as cadet officers on the vessels of the shipping interests in San Francisco, which were coöperating through an Advisory Board formed by the Section Chief of the Shipping Board. When these men have obtained the necessary sea experience they will be entitled to take the government examinations before the United States Inspectors. Seventy-three students enrolled in the night course. On November 5, a third course was started with an enrollment of forty-seven. Eighteen students were also enrolled at Los Angeles in an extension course conducted by S. B. Nicholson and Alfred Joy of the Mount Wilson Solar Observatory of the Carnegie Institution. The total number of students admitted to extension courses to December, 1917, was one hundred and eighty-seven.

These students, who were without sea experience, had enrolled in the expectation that the Shipping Board would accept them for sea training, or in anticipation of being accepted as cadet officers by the merchant marine. When it was found that arrangements could not be made on the part of the Shipping Board for the acceptance of men without sea experience, and when it was realized that but few positions as cadet officers were available, the majority enrolled in the United States Naval Reserve. This led to a reorganization of the work in the University Extension so as to meet, first of all, the needs of men desiring to prepare themselves for the ensign's examination.

Recently the Shipping Board has made provision for the training of men without sea experience by providing school ships under a Sea Service Bureau. The Extension Division classes continue to be open to students desiring to enlist with the Shipping Board or to enter the Merchant Marine as cadet officers, subject, however, to the entrance requirements set for men preparing for the ensign's commission. The progress of the Shipping Board's School under the administration of Section Chief Griffiths is set forth below.

On Tuesday evening, December 11, forty of the extension students who had enrolled in the Naval Reserve presented a petition for a short course in Naval Regulations, Seamanship and Ordnance, to be completed before reporting for duty on January 1, 1918, at the San Pedro Naval Training Station. At a conference held the following morning with Lieutenant-Commander F. P. Gaddis of the San Francisco Naval Training Station at Yerba Buena Island, arrangements for the desired course with Boatswain Wallace Hanna in charge were completed and instruction began at the Ferry Building the same afternoon.

At the same conference with Lieutenant-Commander Gaddis, arrangements were made for instruction to be given at the University in Naval Regulations by Ensign F. Bense, and in Seamanship and Ordnance by Ensign E. F. Sale. A series of courses in Naval Training was agreed upon and the same afternoon the tentative plan for a curriculum in naval training was submitted to the Executive Committee of the Engineering Council. The plans were approved by the Committee and later by President Benj. Ide Wheeler, who announced them at the University Meeting the following Friday. This marked the beginning of the now well-organized curricula in Naval Training, both in the University at Berkeley and in the University Extension Division at the Ferry Building, San Francisco. Associate Professor of Practical Astronomy R. T. Crawford was placed in charge of the curriculum at Berkeley as Chairman of an Administrative Board. Later Dean T. M. Putnam, Associate Professor of Mathematics, succeeded Professor Crawford, after the latter's entrance into the United States Army as Major in the Signal Corps. An account of the naval training work in the University at Berkeley is given elsewhere.

The Commandant of the Twelfth Naval District, Captain Russell, has sanctioned the voluntary efforts of the University and is giving the University officers in charge of the work at Berkeley and in San Francisco the benefit of his advice. Permission is being granted to men in service to attend the courses, and qualified men have been enrolled in the Naval Reserve with time extensions to take and complete the courses, whenever practicable.

The instruction at the Ferry Building is now organized as an eight weeks' intensive training course, under the supervision of Professor Leuschner. The instruction is given by Ensign F. Bense, United States Navy, in Naval Regulations, Ensign Miller in Seamanship and Ordnance, Captain George Harding and Mr. H. G. Wrecklage in Navigation and Nautical Astronomy. The admission requirements are the same as for the Officers' Material School of the United States Navy, from which selected men are sent to the United States Naval Academy at Annapolis. The first intensive training course began on January 7, 1918, with seventy-two students, the second on March 15, with sixty-five students, the third on May 20, with one hundred and thirty-four students. The next course began July 22, 1918, with a very large enrollment, two hundred and fifty applications being received. On September 23, the fifth course opened with a large enrollment. Detailed reports on the men enrolled are furnished regularly to the Commandant. University credit is given for all the courses. Students who satisfactorily complete all the courses offered are given certificates signed by the President of the University. The advantages that students gain from the naval training offered by the University are greater eligibility for admission to the Officers' Material School, shortening of their training in theoretical subjects while in service and the opportunity of securing higher rank in the examinations given by the United States Navy for the ensign's commission, after they have been in service a sufficient length of time and have qualified as officer material.

At the initiative of Lieutenant-Commander Gaddis and with the sanction of Captain Durrell, Commandant of the San Francisco Naval Training Station at Yerba Buena Island, the University has also been given the opportunity to coöperate in the conduct of an officers' training school for men in the regular Navy at the Ferry Building. This school runs parallel with the intensive training school for the United States Naval Reserve. Two subjects are taught in eight weeks—Naval Regulations, and Navigation and Nautical Astronomy. Men in service in the regular Navy at the San Francisco Naval Training Station are chosen by the Commandant from high school graduates and college men for the Commissioned Officers' School, University of California Extension Division, and for the United States Naval Training Station, San Francisco, California. To the first school commencing January 7, 1918, forty-four men were detailed. Of these, thirty-nine were recommended as qualified and sent east to be entered for competitive examination at Norfolk, Virginia, on March 23. One hundred and eighty-five men entered the competitive examination. Of the University of California men, 75 per cent passed, as against 52 per cent of the men trained elsewhere. Thirty men have graduated from the second school; the third school ended July 15. The men of the first school have made a notable record and have contributed to California's rating by the Bureau of Navigation, which at present is the highest in the country. The University is endeavoring, in so far as it is capable of being of service, to assist the Commandant of the Twelfth Naval District in maintaining this rating. The courses were inspected in April by Rear Admiral Ross, of the Bureau of Navigation, who is in charge of officers' training in the United States Navy, and received his approval. The graduates of the University's three distinct naval training schools who are now in service are writing enthusiastically regarding the training they have received. The University seems to be rendering a real and valuable service through its naval training courses in the government's effort to meet the demand for junior officers.

Until June, 1918, Mr. Griffiths was Section Chief for California of the Shipping Board Recruiting Service with direct charge of the navigation and engineering schools of the Board in this state. Between August, 1917, and June, 1918, four navigation schools and one engineering school were organized. The former were located at San Pedro, Los Angeles, and San Francisco, respectively, and showed to June 30, 1918, enrollments as follows:

San Pedro (This school was closed December 15, 1917)	35
San Diego	50
Los Angeles	122
San Francisco	200

The Engineering School which was opened May 20, 1918, at the University of California by the Shipping Board in conjunction with the University, had approved seventy-three applications for admission up to June 30, 1918. Of the graduates of the various navigation schools one hundred and ninety-one had been duly licensed as officers in the American Merchant Marine up to June 20, 1918, most of them as second mates, and of these the vast majority have gone to sea.

The San Diego Navigation School was originally under the instruction of Dr. Heber D. Curtis, Astronomer at the Lick Observatory. He was succeeded by Mr. Oscar A. Littchen, a graduate of the San Pedro School. The San Pedro School was under the instruction successively of Dr. F. J. Neubauer of the Astronomical Department of the University and of Dr. W. F. Meyer of the International Latitude Observatory at Ukiah. The teachers in the Los Angeles school have been Captain H. C. Frerichs and Dr. Neubauer. The San Francisco School from the beginning has been under the head instructorship of Professor Sturla

Einarsson of the Department of Astronomy of the University, with Dr. Neubauer, Captain George Harding and Mr. Lew Spaulding as assistants at different times. The instructor in charge of the Engineering School at Berkeley is Mr. David W. Dickie, marine architect of San Francisco and lecturer in the University. He is assisted in the instruction by Irving M. Scott, Arthur B. Domonoske and Ernest J. MacDonald, all of the faculty of the University.

Actual sea experience is prerequisite for admission to these engineering and navigation schools of the Shipping Board, with the exception that men with engineering experience may enter the engineering schools without sea experience, on the understanding that they will go to sea as oilers, firemen, or in similar capacity for the requisite time before receiving their licenses as engineering officers from the United States Steamboat Inspection Service. The purpose of the schools is to train men to be deck officers and engineering officers in the American Merchant Marine and thereby supply the pressing call for men to take charge of the great fleet of merchant vessels recently constructed or now in course of construction by the government and private owners.

COURSES PREPARATORY FOR SERVICE IN THE NAVY

At Berkeley

In January, 1918, ten courses covering the subject matter required in the examination for the commission of ensign and two additional courses recommended as electives were offered in the curriculum of the University. These courses were based on the curriculum of the United States Naval Academy at Annapolis. This plan covered the following subjects: trigonometry, naval and nautical astronomy, naval history, oceanography and marine meteorology, ordnance and gunnery, seamanship, naval gunnery, naval regulations, physical education and drill, marine engineering, and naval architecture.

The ensign examination for a commission in the line requires training in ordnance and gunnery, seamanship, naval gunnery, naval regulations, and navigation and nautical astronomy. For the commission of ensign in engineering, naval regulations, marine engineering, and naval architecture are required. The courses in naval history and oceanography and marine meteorology are recommended as electives. When the course in naval history was instituted in this connection it was the second of its kind given in a university of the United States—the only other course in naval history was in the curriculum of Harvard University.

Enrollment in the principal courses in this field varied during the term from seventy-six to one hundred and eight. Of the total number registered thirty-six were members of the Naval Reserve who had been granted relief from active duty until May 15 for the express purpose of taking these courses. The students who completed the required courses with a satisfactory record were given a certificate to that effect. The number of men who completed the required courses by May was fifty-nine. There are now enrolled thirty-four others who are applicants for the certificate at the end of the Summer Session of 1918 or in December, 1918. The scholarship standing in these courses has been almost uniformly high. It is expected that after practical training on board ship the holders of these certificates will be given an opportunity to take the qualifying examinations for commissions.

The work of instruction in these courses has been carried on by members of the University faculty. Dean T. M. Putnam is now in general charge of this curriculum. Although the University has not received official recognition for this work, much personal encouragement has been received from the Commandant of the Twelfth Naval District and the officers at the training station on Yerba Buena Island. They have allowed two officers, Ensigns Sale and Bense, to conduct three of the courses in the evening. In addition Chief Yeoman Segure has been assisting in the course, conducting the physical exercises.

The work was recently inspected by Rear Admiral Ross of the United States Navy. It is proposed that these courses shall be continued during the year 1918–19.

COURSES IN MARINE ENGINEERING AND NAVAL ARCHITECTURE

The University announced courses in Marine Engineering and Naval Architecture on January 15, 1918. When the courses opened twenty-one students enrolled. These courses have continued throughout the half-year. The students admitted were either graduates from, or seniors in technical schools or colleges of recognized standing.

The work in Naval Architecture has been arranged in conformity with directions issued by the United States Civil Service Commission for ship draftsmen. The items included in this course relate to ship design and construction and cover in particular displacement, buoyancy, stability, resistance and propulsion, structural arrangement, specifications, drawing and design. The students enrolled have worked out a design for a steel tug one hundred feet long, and in this work they have gone into sufficient detail to see how a ship design is obtained.

A number of persons interested in the school have donated certain parts of apparatus used on board ship. Shipbuilding companies in the San Francisco Bay district have entertained the members of the class at the shipyards, showing them in detail the methods used in shipbuilding. Members of the class have also been allowed to operate certain machinery of the Key Route Ferry system, thereby demonstrating the actual working of a completed design. The work has been give nunder the direction of Professor David W. Dickie, Lecturer in Marine Engineering and Naval Architecture.

Beginning on May 20, 1918, a course in Naval Architecture was given for ten or twelve weeks. This course followed in outline a special short course in Naval Architecture suggested by the United States Civil Service Commission at Washington. This work has been in charge of Mr. Dickie. It is contemplated that the work in Marine Engineering and Naval Architecture will be continued at the University during the year 1918–19.

COURSES IN RADIO COMMUNICATION

During the past year, work in Radio Communication has been given in connection with the School of Military Aeronautics, a review of which has already been made. Mr. G. L. Greves of the Department of Electrical Engineering has also given a number of courses in that department. During the regular Summer Session he gave a six weeks' elementary course in Radio Communication.

A new and more complete course commenced on May 20 and continued for twelve weeks. This course is designed to cover the field in such a manner as to meet the demands of the War Department. A prospectus was received from the office of the Chief Signal Officer of the Army, and a University committee formulated the course in accordance with those suggestions. The war application of the information given in the course is extensive and includes systems of radio transmission, including commercial and military equipment, elementary telegraphy, telephony and circuit work. It also includes code practice to the extent of four hours per week.

The prerequisites for admission to such a course, as outlined by the War Department, include certain preliminary training in electrical engineering. At the present time students of junior standing or above who are enrolled in electrical engineering, students who have had courses in electrical engineering dealing with direct and alternating current machinery and those whose practical training has fitted them to undertake the work are admitted to the course. The last class includes amateur radio operators who have had considerable experience, and who have a good understanding of the theory.

MILITARY BUREAU

Even before President Wilson's message of April 2, 1917, the Regents had passed a resolution placing the resources of the University of California at the disposal of the national government in the event of war. As one means of carrying out their action, they established a Military Bureau under the direction of L. J. Richardson, Associate Professor of Latin, and Homer Havermale, Alumni Secretary. Its first business, under date of April 12, 1917, was to ask all men of the University body—faculty, alumni, and undergraduates—to fill out a personnel index card. The request included the following statement:

ORGANIZATON FOR NATIONAL SERVICE

To the Faculties, Alumni and Students of the University of California:

The President and the Regents have placed the University of California in the present crisis at the service of the state and federal governments. Accordingly, the University is taking account of its resources in both information and materials. Moreover, it is putting on record what each member of the University—faculties, administrative staff, alumni, students, and former students—has done, is doing, or in the event of need could do for the general defense.

To assist in this work you are asked to fill out the enclosed card, and to return it at once. The University would like also to include in this census the families of its officers, alumni, and students, and upon request cards will be sent for the registration of these persons. All information set down upon your card will be regarded as confidential. The signing of the card in no wise commits you to enter the government service unless you desire to do so.

The responses numbered 3070, and nearly all of them offered services in one form or another.

The functions of the Military Bureau have undergone many changes and much expansion since the issuance of the original questionnaire. The Bureau as developed has three separate functions: it serves as an information office, a personnel office, and as a liaison office between the University and various military departments and bodies.

An average of 2500 persons per month seek the Military Bureau for information and advice. The variety of questions asked is infinite. Many seek information regarding draft regulations, army and navy regulations, army and navy orders, military procedure and methods. In this connection it may be said that Military Bureau endeavors to answer every reasonable question asked in good faith.

It also coöperates to such extent as is possible with committees and organizations engaged in war work, such as training, publicity, relief or reconstruction activities.

As a personnel office the Military Bureau has occupied a distinctive place in the general military establishment. For a long time the office was connected with the Intercollegiate Intelligence Bureau, a civilian body operating with the approval of the War Departemnt. The absorbing of the Intercollegiate Bureau by the Adjutant-General's office brought a new standing to the Military Bureau, which is now directly connected with that office in Washington.

From the Adjutant-General's office requisitions for skilled men come to the Military Bureau. These calls come also from various department chiefs who look to universities for their personnel. Typical calls follow:

June 9, 1917, a call for an alumnus in each of the following cities: Los Angeles, Portland, Salt Lake City, and San Francisco. The men selected are to be on committees whose functions are: (*a*) To investigate the ability, reputation and association of any one desired for special work by the national government in order to make sure of fitness and loyalty; (*b*) to assist in discovering for the national government men in various occupations who could be induced to leave their work in special cases where their ability is particularly desired by the government; (*c*) to arrange with local firms and organizations to release certain of their trained help when the need by the government is very great indeed and probably could not be satisfied in any other way.

May 9, 1917, a call came to supply for service in France an ambulance unit consisting of a first sergeant, second sergeant, corporal, two orderlies, two clerks, twenty-four drivers, three mechanics, and two cooks. Men were selected and enlisted for these positions and are now in the United States Army Ambulance Service under command of Lieutenant-Colonel Percy Jones. The University of California unit is headed by Lieutenant John F. Edwards, and is officially designated as Section 86 of Battalion 21, U. S. A. Ambulance Service. The needs of the men are being looked out for at home by the Friends of Section 86, an organization of parents and friends, who are sending to France clothing, reading matter and other things needed by the men.

October 5, 1917, a call to secure three or four assistants in the War Trade Intelligence Division of the Export Administrative Bureau.

A call for women to serve as nurses in France; a similar call for telephone operators.

A request to examine, induct and assign to Edgewood Arsenal. Md., one hundred chemists.

A request to supply men for the Enlisted Specialists' Preparatory School at Fort Winfield Scott.

The above calls indicate roughly the variety of requests made. Since the organization of the office 380 additional calls have been received, many of them being requests for specialists.

These calls are made known to the public and to the alumni of the University through newspapers, University publications and the *Alumni Fortnightly*. Applicants are examined and are either inducted, or their credentials are rated by committee men in the faculty and then sent to authorities requesting assistance.

Besides acting as personnel agent at the specific request of the government, there is another function, namely to help men and women secure places in the national service. Persons who have decided to offer their services to the army, navy or other branches of the national government usually find here both information and direction. The office in this phase of its work is somewhat like an employment agency. Its files already contain the names of many persons, other than those mentioned above, who have expressed themselves as willing or anxious to serve the country in the present emergency, each of these candidates having filled out a prescribed questionnaire setting forth his training as well as his professional or business experience. The office, in turn, undertakes to watch the government calls with reference to applications and wherever consistent with the country's interests, to help candidates to find places in the service. The office has assisted in this way more than 1100 persons, a large percentage of whom have secured positions. Many nominations are made through the War Service Exchange, Adjutant-General's Office, Washington.

As liaison office the Military Bureau undertakes to serve as a contact point between the University and military offices and boards. It has served as headquarters for committee organizations to aid the military establishment; also as officers' headquarters for those who have desired to make use of University facilities. It has placed the volunteer services of faculty members at the disposal of military departments. The Bureau is now aiding the Adjutant-General of California in organizing committees to instruct registrants in matters of hygiene and morale; and through the coöperation of the Summer Session the Military Bureau registered and assigned more than 200 volunteer registrars for the September 12 draft. These cases indicate the duties fulfilled by the Military Bureau as a liaison agent.

Finally, the Military Bureau in coöperation with the Alumni Association is keeping war records of all alumni in service. Close touch is maintained with the American University Union in Paris, London and Rome.

REPORT OF PERSONNEL DIVISION

The following branches of the service have been supplied with men, January 10 to August 31, 1918:

Engineer Reserve Corps	130	
Ordnance Department	132	
Quartermaster Corps	21	
Infantry	112	
Artillery	193	
Navy	77	
Medical Corps	89	
Air Service	27	
Signal Corps	101	
Intelligence Service, Army and Navy	5	
Chaplains	2	
		889
Civilian:		
Red Cross	44	
Y.M.C.A.	95	
Civil Service, War Service Exchange, Women's Collegiate Section, and miscellaneous	86	
		225
Total		1114

ORDNANCE TRAINING SCHOOL

The Training School for Ordnance Field Service at Berkeley was begun in October, 1917, at the suggestion of the Ordnance Department in Washington. Its purpose was to select and to give preliminary training to men who ultimately were expected to reach the grades of non-commissioned, and in some cases, of commissioned officers in the Ordnance Service. The enrollment to the date of closing of the school was as follows: Course No. 1, nineteen; Course No. 2, thirty-two; Course No. 3, forty-five; Course No. 4, fifty.

Instruction was given by members of the Department of Economics and of the School of Jurisprudence, assisted by one commissioned and one non-commissioned officer detailed by the War Department for the purpose.

The course of study at Berkeley covered the principles of storeskeeping; calculating methods of accounting, used in connection with Army supplies; military organization; military correspondence; military law; and military courtesy. Special emphasis was laid on visits to industrial establishments in San Francisco and Oakland. One hour a day was devoted to drill.

Students were enlisted or inducted into the military forces of the United States before beginning their work at the University. At the expiration of their period of study at the University, they were assigned to an arsenal for six weeks' further training, and after this were again assigned to depot companies wherever their services were needed. From the depots the most capable ordnance sergeants were usually sent to the Officers' Training School at Camp Mead, Pennsylvania.

The time allotted for each course was six weeks. Dean H. R. Hatfield, Professor Daggett, and Lieutenant Green were in charge of the school. The school was discontinued in May, 1918, and was transferred by the War Department to Fort Hancock, Georgia.

COURSE IN MILITARY ENGINEERING

The Academic Senate has authorized a curriculum in the College of Civil Engineering leading to the degree of Bachelor of Science in Military Engineering. The formation of the course has been in the hands of the Engineering Council which has conferred with Major-General W. M. Black, Chief of Engineers of the United States Army. The completion of the proposed course would qualify the student to undergo the competitive examination for a commission in the Corps of Engineers in the United States Army, and at the same time would give him training preparatory to the practice of engineering in civil life. The curriculum differs in a number of points from the ordinary course in the College of Civil Engineering. When this is established, a student entering the College of Civil Engineering may elect his course from Railroad, Irrigation, Sanitary, or Military Engineering.

THE COLLEGE OF AGRICULTURE

On February 7, 1917, Dean Thomas Forsyth Hunt of the College of Agriculture wrote President Benj. Ide Wheeler of the University, suggesting that in the event of war, faculties and facilities of the University should be placed wholly at the service of the Federal Government, and outlining the activities which the Department of Agriculture might properly undertake, On February 13, 1917, the farm advisors and the assistant farm advisors of the state were informed that the Board of Regents had placed the resources of the University at the disposal of the several departments of the Federal Government, including those of War, Navy, and Agriculture. As will be indicated later, the advisors were directed to make a confidential report on the measures which might be undertaken within their respective counties to promote food production.

On April 8, 1917, the President of the University directed the Department of Agriculture to assist the State Council of Defense through its Committee on Resources and Food Supply, of which President Wheeler is chairman, in any manner that might be deemed necessary to further the interests of the nation.

As a result of this action, on April 10, 1917, Dean Hunt presented to the committee some fundamental considerations affecting the food supply of the United States, in which an immediate food and farm labor inquiry was recommended.[1] By direction of the Committee on Resources and Food Supply, the Department of Agriculture of the University, in coöperation with the United States Forest Service, the State Commission of Horticulture, the State Board of Health, the State Veterinarian, the State Market Director, the Sacramento Valley Development Board and the California Fruit Growers' Exchange, conducted an inquiry between April 16 and 27, with hearings in fifty-five counties in California. Certain definite recommendations were made to the State Council of Defense. An extended report of this inquiry has been published, which has formed the basis for further activities.[2]

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[1] Hunt, Thomas Forsyth, Some Fundamental Considerations Affecting the Food Supply of the United States, Univ. Calif. Agr. Exp. Sta., Circ. 163, 1917.

Offer of Facilities and Services

At the request of the Western Division of the United States Army, a committee of the faculty of the Department of Agriculture with R. L. Adams, Associate Professor of Agronomy, as chairman, submitted a report to the government on the University Farm as an available location for a cavalry unit of the United States Army. Statements were furnished as to the possible utilization of other resources, such as that of the plant pathology department for medical work, and the special knowledge of C. W. Woodworth, Professor in Entomology, in optics, as bearing on the manufacture of field glasses. A detailed report was also made to the War Department on the military training of the members of the Department of Agriculture since one hundred and eleven of its one hundred and forty-seven members had undergone some military training.

Utilization of High School Boys and Girls

On May 12, 1917, Dean Hunt submitted to a joint meeting of the Committee on Resources and Food Supply of the State Council of Defense, and a committee of the State Board of Education, a plan for the mobilization of high school boys and girls for agricultural and other industrial work. This resulted in the active coöperation of Mr. Will C. Wood, representing the State Board of Education, and Mr. E. M. Cox, representing the school principals of the state. Under their direction a canvass of a portion of the high schools of the state was made in June, 1917, 3300 boys and 2400 girls being listed as available for agricultural or other industrial work. During April, 1918, a list of all available boys and girls in the high schools was made and all boys of high school age, not in high schools, were urged to enlist in this boys' working reserve.

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[2] Ann. Rep. Coll. Agr. and Agr. Exp. Sta., Univ. Calif., pp. 39–95, 1917.

In order to attain as large an acreage of crops as possible, ten members of the faculty were sent out during the first two weeks of May, 1917, to canvass all the high schools of the state and call upon boys living on farms to join the agriculture clubs as war members in order to grow crops for their own profit and for the nation's benefit. In twelve days all of the high schools of the state except those located in large cities were canvassed by the following: S. S. Rogers, Associate Professor of Olericulture; J. I. Thompson, Assistant Professor of Animal Husbandry; R. S. Vaile, Assistant Professor of Orchard Management; G. W. Hendry, Assistant Professor of Agronomy; A. W. Christie, Instructor in Agricultural Chemistry; J. C. Martin, Assistant in Agricultural Chemistry; I. F. Davis, Instructor in Agricultural Extension; W. R. Ralston, Assistant in Agricultural Extension, and R. M. Hagen, Instructor in Agricultural Extension. Twenty-thousand boys were addressed, 998 responding by the planting of approximately 1500 acres.

In addition to this campaign, the regularly enrolled members of the agricultural clubs were asked to increase their acreage of crops. One hundred and eighty-five boys responded by planting 600 acres. Thus 2100 acres were planted by the boys to war crops, in addition to the regular acreage grown every year by agricultural club members on a contest basis.

Farm Labor Organization

That an acute farm labor situation might arise was early anticipated. In May, 1917, a plan was outlined by which Professor R. L. Adams of the Department of Agriculture would be jointly employed by the United States

Department of Agriculture and the University of California as farm help specialist, and that through the Committee on Resources and Food Supply he should represent the State Council of Defense in its farm labor activities. Immediately, steps were taken to bring together all the agencies dealing with farm labor. To that end a public meeting was held at the University in Berkeley on May 31, 1917, at which a thorough discussion of the labor situation took place.

Discussion of the Problem

On June 15 and 16, 1917, five sessions of the staff of the Department of Agriculture were held, at which time an attempt was made to anticipate the war emergency activities of the staff. Committees were appointed and duties assigned to the various members. Careful consideration was given to the character of all investigational work in progress, to the end that long-time projects of a fundamental character might be continued. Projects of a more temporary or less fundamental character gave way to war emergency investigations or agricultural extension work. About fifty new food production projects developed by war necessities have been started.

Coöperation with Other Agencies

In various ways members of the staff of the Department of Agriculture have been brought into active coöperation with the Federal Food Administration for California.[3] Dean Hunt has been chairman of its Agricultural Production Board, consisting of about one hundred and fifty farmers drawn from all parts of California, and chairman of the District Milk Commission of the United States Food Administration. The commission passed upon the price of milk which the producers should receive from the distributors and which the distributors should charge the consumers during the three months, January to March, 1918, inclusive. Dean H. E. Van Norman of the University Farm School and Professor of Dairy Management, is executive secretary of this commission. Gordon H. True, Professor of Animal Husbandry, is chairman of the Livestock Commission of the Federal Food Administration for California. The Livestock Commission through conferences with meat packers of the Pacific Coast, secured an agreement to a minimum price for hogs one cent under the Chicago market for the same date, and has performed other services of an important nature in connection with the livestock situation. The University's Department of Agriculture has thus been the representative of three agencies in matters concerning ing food production in California, viz., the United States Department of Agriculture, the United States Food Administration and the State Council of Defense, simultaneously occupying a status of its own which has no necessary relation to any of them. The policy in California has been to coördinate all these agencies by means of interlocking committees so that the allied forces could more readily work to a common end. In this regard California has been measurably successful. It has been freely recognized that personal and institutional interests must be set aside for the larger interest.

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[3] Ralph P. Merritt, Comptroller of the University, has been granted leave of absence from the University to serve as Federal Food Administrator for California, in which capacity he has been engaged since the organization of the Food Administration.

Permanent Organization

It is somewhat difficult to chronicle the war activities of the Department of Agriculture, because these activities are interwoven with its research and instructional work, and because many of the activities which may now be considered war emergency work were a part of the normal activities of the organization. To increase the production of food is, certainly, one of the functions, perhaps the chief function, of the department in peace times. Its war activities are, therefore, a matter of emphasis rather than a change from its permanent function.

For example, when war was declared, only twenty counties had organized with farm advisors. Anticipating funds from the Federal Government for additional farm advisors, which became available in September, the Department of Agriculture decided in June to attempt the organization of nineteen additional counties, using its own funds for expenses and contributing the services of nineteen members of the staff of the department for this purpose. Men were thus transferred from investigational and instructional work to promote more directly the increased production of food.

Vocational Agricultural Instruction

It is part of the regular work of the farmers' short courses to give instruction in operating gas tractors. This year special emphasis was placed upon this instruction on account of the need of tractor operators, an additional course being given at the Citrus Experiment Station and Graduate School of Tropical Agriculture at Riverside. During the year approximately 500 persons have been given instruction in operating tractors. By correspondence and otherwise, the department has sought to meet requests for tractor operators and to promote more efficient use of the existing tractors. To this end, a tractor and implement demonstration was held under the auspices of the California Tractor and Implement Association at the University Farm, Davis, April 17 to 19, 1918, inclusive, in which J. B. Davidson, Professor of Agricultural Engineering, took the leading part. The attendance during the three days was estimated at 45,000 persons.

While the College of Agriculture has been for years preparing students to teach agriculture in the secondary schools, the passage of the Smith-Hughes Vocational Educational Bill, combined with the war and the request of the State Board of Education, has led to the organization of an entirely new programme of instruction at the University Farm. This instruction is now occupying a considerable portion of the time of several members of the staff.

Conferences

There have been many meetings and conferences, some of which may properly be chronicled as war activities because of the common impulse to make every agency contribute towards winning the war. An example might be cited in the meeting of the Plant Pathology War Emergency Board held in Agriculture Hall, Berkeley, on March 30, 1918. Twenty-nine plant pathologists and scientists in related fields were present. War activities for plant pathologists were discussed in this session in which a leading part was taken by eight members of the staff of the department.

Personnel

Thomas Forsyth Hunt, Professor of Agriculture, Director of the Agricultural Experiment Station, and Dean of the College of Agriculture, is acting chairman of the Committee of Research and Food Supply of the State Council of Defense, J. E. Coit, Professor of Citriculture, J. W. Nelson, Assistant Professor of Soil Technology and member of the subcommittee on Occupational Selection of the Pacific Coast Research Conference, E. O. Essig, Assistant Professor of Entomology, and R. W. Hodgson, Instructor in Citriculture, have been transferred to farm advisor work for the duration of the war, while W. T. Horne, Associate Professor of Plant Pathology, has taken up the field study of certain diseases of deciduous fruits, of special importance in army rations.

Professor Vaile has entered the Armenian and Syrian Relief Service. P. L. Lantz, Assistant in Agricultural

Extension, entered the military service January 18, and died of pneumonia at San Diego on March 8, 1918. Professor Davidson is chairman of the Committee on War Work of the American Society of Agricultural Engineers.

Walter Mulford, Professor of Forestry, is a member of the State Committee of the Society of American Foresters. B. H. Crocheron, Associate Professor of Agricultural Extension and State Leader of Farm Advisors, is director of the Boys' Working Reserve for California.

Elwood Mead, Professor of Rural Institutions, by virtue of an arrangement between the University and the Department of the Interior, has acted as official advisor on reclamation projects embracing about half the states of the arid region. This work has necessitated conferences with officials and farmers in Arizona, California, Idaho, Nevada and Washington, also two trips to Washington, D. C., to confer with authorities of the Department of the Interior.

C. F. Shaw, Professor of Soil Technology, and W. W. Weir, Assistant Professor of Soil Technology, have been active in the Food Production Committee of the Commonwealth Club of San Francisco, the latter being chairman of the Committee on Drainage. J. W. Gregg, Professor of Landscape Gardening, has advised the commandants of Mare Island and Yerba Buena Island on the planting of trees and shrubs for screening and windbreak purposes. C. L. Roadhouse, Professor of Dairy Industry, represented the University at the World's Food Conference in Philadelphia, September 14 and 15, 1917, held under the auspices of the American Academy of Political and Social Science. E. R. de Ong, Instructor in Entomology, is one of the consulting entomologists of the Federal Food Administration for California, *vice* Professor Essig, who was transferred to field service. J. S. Burd, Professor of Agricultural Chemistry, is a member of the Board of Legal Advisors for Exemption District No. 2 of Berkeley.

W. H. Dore, Assistant Chemist in Fertilizer Control, is aiding the Preparedness Committee of the United States

Naval Construction Board, collecting information for an industrial inventory of local manufacturing resources. J. C. Marquart, Assistant in Dairy Husbandry, is representing the Dairy Division of the United States Department of Agriculture, and is inspecting the butter being supplied by Navy contractors. D. E. Martin, Assistant in Agricultural Extension, is Assistant Farm Advisor, State Relations Service.

The following twenty members of the staff are on war leave to enter the military service of the Government:

Donald Bruce, Assistant Professor of Forestry.
R. E. Clausen, Assistant Professor of Genetics.
C. M. Haring, Professor of Veterinary Science.
W. B. Herms, Associate Professor of Parasitology.
D. T. Mason, Professor of Forestry.
H. A. Mattill, Assistant Professor of Nutrition.
E. C. Voorhies, Assistant Professor of Animal Husbandry.
C. V. Castle, Instructor in Animal Husbandry.
W. T. Clow, Assistant in Animal Husbandry.
D. B. Cohen, Assistant in Olericulture.
P. I. Dougherty, Assistant in Agricultural Extension.
L. D. Hazeltine, Assistant in Agricultural Extension.
V. W. Hoffman, Assistant in Pomology.
F. T. Murphy, Assistant in Agricultural Extension.
A. N. Nathan, Assistant in Agricultural Extension.
W. D. Norton, Assistant in Agricultural Extension.
F. W. Nunemacher, Office Assistant.
A. F. Swain, Assistant in Entomology.
H. A. Wadsworth, Assistant in Irrigation.
H. H. Yost, Instructor in Agronomy.

Publications

During the twelve months dealt with in this recital the Department of Agriculture and Agricultural Experiment Station have published fourteen bulletins, thirty-nine circulars, and fifty numbered emergency leaflets. Most of these publications deal with subjects relating to the increasing of food production; many have been published to answer specific questions or promote programmes of immediate national interest. They cover almost every phase of food production and preservation which has arisen out of the war. Altogether, during the year, there have been distributed 26,402,000 pages of printed matter.[4]

Special Courses and Lectures

In addition to special courses in poultry husbandry, dairying, and food canning and preservation, given to home demonstrators and others expecting to practice or give instruction in these matters, a laboratory and demonstration course was given at Berkeley by the Division of Viticulture in the practical details of food preservation to students who were properly prepared and who expected to make use of the knowledge during the summer. F. T. Bioletti, Professor of Viticulture and Enology; J. R. Zion, Assistant in Viticulture, and E. A. Way, Field Assistant in Viticulture, gave during the year sixty-two demonstrations to grape growers in fifteen counties. Twenty-six demonstrations of methods of food preservation were given by W. V. Cruess, Assistant Professor of Zymology, in thirteen counties, and three demonstrations to olive growers by Professor Bioletti in two counties.

The total attendance was 4396. The number of inquiries during the year by letter, telephone and personal visit has been exceedingly large. In the main office of the Division of Extension alone, more than 30,000 letters have been written, while the total number of letters written by members of the staff of the Department of Agriculture, not including farm advisors and agricultural club leaders, has been during the year approximately 120,000. The majority of the inquiries deal directly with the production of food and its preservation. Many calls have been received for assistance in controlling insect pests, fungus diseases and rodents. A considerable number of requests for the investigation of property to ascertain its agricultural value have been received. Land which has never produced, or which has for a period been unproductive, is now yielding a food product.

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[4] Complete lists of these publications may be found in the Annual Reports of the College of Agriculture and Agricultural Experiment Station, University of California.

During the Christmas recess a special short course for veterinarians was held at Davis, in which surgery of the army horse and the prevention of blackleg and anthrax, two diseases causing serious losses in cattle in this state, were the principal subjects of discussion. Eighty-seven veterinarians attended; a number of them have since entered the veterinary reserve camps of the United States Army.

A training course for machine milkers—the first ever arranged by a public institution—was conducted at the University Farm, April 1 to 12, 1918, for the purpose of ameliorating in a measure the growing difficulty of securing efficient hand milkers on dairy ranches.

Agricultural Preparedness Train

Through a coöperative arrangement between the Salt Lake Railroad and the Experiment Stations of Utah, Nevada, and California a special Agricultural Preparedness Train was run over the Salt Lake Route from Sandy, Utah, to Los Angeles, California, during the month of May, 1917. The Agricultural Experiment Station of California furnished the exhibits for two cars—one having a very complete display of commercial varieties of beans, the other showing various forage crops. Two members of the station staff accompanied the exhibits, explaining to inquirers the variety or varieties best suited to certain localities or to types of soil, and offering suggestions as to methods of culture.

Farm Labor

During the crop season of 1917 careful inquiries were conducted into the farm labor situation under the direction of Professor R. L. Adams, to determine actual conditions, contributing causes and possible remedies.[5] Early in December, 1917, a plan of operation based on the experiences of this and other states was prepared for the guidance of those investigating farm labor problems. This plan embraced as its important features the following:

1. The recognition of the fact that men engaged in unnecessary industries in the cities, women, and high school students, constitute a potential source of farm labor.

2. The reorganization and extension of existing public employment agencies to a point at which a larger utilization of all forms of labor would be more efficiently distributed.

3. To reinforce the chief provision of this plan, it was necessary to have every county act as a unit in assisting in its execution, with the county farm advisor serving as the central agency for each county; the mobilization of women and high school students as aids in the farm labor situation, constituting the tasks of the California Industrial Welfare Commission and the State Board of Education.

This plan has been carried out and many of its details comprise the present basis of procedure.

Looking beyond the possibility of the state's labor supply, potential and actual, the plan further provided for the consideration of the proposal for the importation of foreign labor provided the federal agencies for labor supply were unable adequately to add to the state's supply.

Accompanying the execution of the provisions of the plan, a careful inquiry was conducted during February and March to determine the probable farm labor needs and supplies for 1918, which resulted in showing a shortage of labor above the visible supply for every month. This is indicated in the following table:

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[5] Univ. Calif. Agr. Exp. Sta., Circ. 193.

Month	Needs other than sugar beets	Sugar beet needs	Total needs
April	1,150	3,000	4,150
May	3,400	3,000	6,400
June	6,375	1,000	7,375
July	8,475	....	8,475
August	9,025	3,000	12,025
September	9,450	3,000	12,450
October	6,875	3,000	9,875
November	2,750	....	2,750
December	800	....	800

These figures were based on normal conditions. Necessarily, a reduction which may be considerable, must result from the deficient rainfall, north winds and substitution of crops demanding less man power, all contributing to a very much smaller agricultural production for 1918 than that anticipated during the winter.

Before the execution of the general plan it became evident that, regardless of other considerations, there were certain classes of work in connection with this year's harvest for which it would be essential to obtain foreign labor—under existing conditions, Mexican.

Special efforts have been made to render federal regulations governing the importation of Mexican labor less stringent. Attempts were made to resort to the original regulations so that railroads could return to free importation of Mexicans and so afford the farmers an added supply of labor for their needs. These attempts failed, and since, under existing federal restrictions, free movement of Mexicans to the United States is not possible, arrangements were made with the California and Colorado Agricultural Labor Association for importation of Mexicans to be used by other individuals or formers under existing farm labor regulations. This arrangement permits economy in importation since Mexicans can now be obtained only under written agreement with the United States Government, for employment solely in agriculture.

Much work has been necessary to maintain a friendly attitude on the part of Mexican officials both in California and in Mexico.

A study of man labor cost of production, to serve as a basis for determining wage standards, was made in January, based on usual crop yields of twenty different crops. As a general result of this investigation it was found that due to high prices of essential farm products, wages might exceed considerably those of normal times—perhaps even be doubled—and still permit of profit.

As a result of special efforts constantly being made to bring about a clearer understanding on the part of the district exemption boards as to California's labor needs and as to what constitutes agricultural labor, it is felt that a larger share of bona fide farm labor will be given deferred classification.

Other activities of the office of the farm help specialist have included actual placement of labor, the establishment of a school for labor at the University Farm, search for additional sources of labor, and mobilization of certain heretofore untapped sources. The University has constantly coöperated with the following organizations: the Commission of Immigration and Housing, the California Industrial Welfare Commission, the Farmers' Committee of the State Council of Defense, the Women's Land Army of America, the Attorney-General's Office (in draft work), the Y. M. C. A., the Boy Scouts, and the State Board of Education; it has also been closely associated with the operations of such private concerns as the Valley Fruit Growers' Association, the California and Colorado Labor Association, the Imperial Valley Labor Association, the California Federation of Farmers, coöperative market associations, and with various public, private, and social committees appointed to consider the farm labor problem.

Activities of Farm Advisors

At the beginning of the war, there were fifteen farm advisors at work. Without propaganda, counties had qualified as fast as funds were available. Apparently there were ample grounds for the expectation that by 1922 all agricultural counties of California would have adopted this system which would gradually have spread over the state during a period of ten years. By February, 1917, it became apparent that war was imminent. Obviously food would be a primary consideration. The farm advisors, therefore, began quietly to make plans for an increased production as an aid to the war, which appeared inevitable. For all counties having farm advisors, confidential surveys were made and delivered to the central office. These clearly indicated certain districts where increased production was feasible. Plans were made for wide propaganda in these districts. The six itinerant assistant farm advisors were quietly moved into these sections to aid the farm advisors when the situation should develop. The outbreak of war in April, therefore, did not find the farm advisor system wholly unprepared in those counties in which men had already been appointed.

However, a large proportion of the agricultural regions of the state did not have farm advisors or farm bureaus. Neither were there funds to pay additional men had they been available. But no sooner had war been declared than the necessity for an increased food supply began to loom large among the war measures. The work done by farm advisors (or county agents, as they are sometimes called) had apparently been so successful in various parts of the country that a general demand arose that their number be increased to supply every agricultural county with such an officer. In most states, councils of defense placed the plan among their proposals and a bill quickly followed in Congress to that end. By September, legislation had been passed appropriating more than $4,000,000 for this purpose for the current fiscal year, of which California was allotted $78,000 through the United States Department of Agriculture. Thus it became necessary to organize in a few months a system, the growth of which normally would cover five years.

There apeared to be thirty-nine counties in California where farm advisors would be most valuable. Of these, twenty had already qualified; all but one of the twenty had farm advisors at work. In order to bring the matter to the attention of the people of the other counties, nineteen members of the staff of the Department of Agriculture volunteered, each to stand sponsor for the campaign in one county. The plan was put before the people of the state at a meeting called by the Governor, as the Chairman of the State Council of Defense, at the capitol at Sacramento on September 10 and 11, to which were invited the entire State Council of Defense, the chairmen of the county councils of defense, the chairmen of county boards of supervisors and certain representatives of the Department of Agriculture. Not the least interesting feature of the meeting was the testimony given in brief addresses by the presidents of the farm bureaus on the value of the work in the counties already established.

The plan also contemplated the appointment of a large number of assistant farm advisors in order not only to extend, but to intensify the work. These assistants were to be distributed on a basis of the number of farms in the county. All counties having more than 1500 farms were to be entitled to an assistant provided the expenses of $1000 per year were met by the board of supervisors. Larger counties were to be given additional assistants on a basis of one assistant to each additional 1500 farms.

By May 1, 1918, work had progressed far in the organization of the nineteen new counties: eleven counties had their farm bureaus completely formed, their appropriations from the boards of supervisors, and their farm advisors appointed; two other counties had their farm bureaus formed and the appropriations made; three counties had their farm bureaus formed and their appropriations pending before the supervisors; only three of the nineteen counties were lagging in the campaign through the apparent indifference of the people.

Defense Programme of the Farm Bureaus for 1917

During 1917, soon after the beginning of the war, every farm bureau in California voted to transfer its activities from its past regular programme to one aimed primarily toward the aid of the National Defense. Every county adopted a defense programme, the main features of which were:

I. The entire membership of the Farm Bureau should constitute a defense department with a committee of five members in charge, appointed by the president. Of this committee, there should be four subcommittees on (1) production, (2) labor supply, (3) financial assistance, and (4) the conservation of food and the elimination of waste. Each one of these, it was planned, would be directed by a member of the executive commitee of the defense department.

II. The programme contemplated: (1) the abandonment of all activities of the farm bureaus which did not bear directly upon the winning of the war, except those activities necessary to the fundamental organization; (2) the inauguration of certain new projects for 1917, which the farm bureaus would endeavor to carry on with all possible energy. While these projects varied in the different counties, the list generally followed for the 1917 season was as follows:

1. Labor survey.
2. Increase in acreage of grain sorghums.
3. Increase in acreage of beans.
4. Increase in acreage of irrigated lands by pumping plants, etc.
5. Increase in number of brood sows kept on general farms.
6. Increase in number of small flocks of poultry kept on general farms.

7. Increase in number of vegetable gardens for home use on general farms.
8. Increase in number of boys registered in agricultural clubs as war members.
9. Financial survey of the county for funds needed for increased cropping.
10. Campaign for the increase of home canning.
11. Silo campaign for the better use of forage crops.

III. While in the past the farm advisors answered all requests to call on farmers and to give advice on matters whether of importance or not, it was decided that so long as the war lasted, the farm advisors would attempt through their local directors to determine which matters would be of the most service in the national campaign. It was recognized that during the war there would be an added burden of many new projects and that every farm advisor's office would be overwhelmed with the amount of work it was called upon to carry.

Increase in the Acreage of Grain Sorghums

The fact that grain sorghums have a wide adaptability, grow with a relatively small amount of moisture and may be planted comparatively late in the season, made this project one of the most important undertaken by the farm bureaus in the early summer. The nineteen county farm advisors believe that their campaigns increased the crop 29,918 acres. There was a general difficulty in obtaining good seed, however, and during the late fall the second statewide project was adopted whereby each farm bureau center selected within the community one or more fields which were of the best and most uniform type and from these selected enough heads to supply the entire farm bureau center for its planting in the spring and summer of 1918. Generally, the grain sorghums throughout the state have been so successful as an immediate aid to the food problem that a wide expansion is certain during the next few years.

Increase in the Acreage of Wheat

The national government decided that it was necessary for America to raise a billion bushels of wheat in 1918. Therefore, a quota was assigned each state by which it should increase its product. This increase required about 80,000 acres from California. The farm advisors adopted a uniform plan whereby they contemplated making farm-to-farm canvasses of those sections of their counties which might grow wheat instead of barley, proposing to the barley farmers that they should transfer one-tenth of their barley acreage into wheat. This, it was known, would more than make up the quota required. The call upon the farmers to raise wheat was not made because it might be a money-making project, but because the necessities of the nation required it. The farm advisors took no responsibility for the subsequent financial outcome. Since, however, the price of wheat for 1918 was guaranteed by an Act of Congress, and since the price of barley was still an open question, many farmers, upon their own initiative, have undertaken to plant wheat, and have planted an increased acreage. In most counties, the original plan for a farm-to-farm canvass was carried out, with the result that practically all counties exceeded their quotas.

Increase in Acreage of Beans

As an aid to the meat supply, beans, which are high in protein and which net a large money return per acre where they can be successfully grown, form one of the most promising annual crops. The farm advisors report that in their counties the acreage was increased 14,264 acres as a result of the high prices and of the programme of publicity into which the farm bureaus entered. Because bean culture has become more thoroughly established over a wider area than heretofore, it is generally believed it will become one of the leading agricultural industries of the state. California produced the largest acreage and yield of dry, edible beans in its history. It not only took first place among the states in acreage and yield, but produced 46 per cent of all the beans raised in the United States. A very exhaustive study of varieties and their adaptations and culture was made by Professor Hendry.[6]

Other Measurable Results

Labor	
Applications received by farm advisors or farm bureaus for farm or household labor	3,830
Laborers supplied through farm advisors or farm bureaus,	
Male	2,989
Female	1,326
Laborers supplied from agencies,	
Male	1,060
Female	667
Crop production campaigns	
Farmers assisted in securing grain sorghum seed	399
Bushels of seed secured	973
Acres of grain sorghums seeded as result of production campaign	29,918
Estimated yield of additional acres in bushels	188,940
Farmers assisted in securing Sudan grass seed	211
Number of bushels of Sudan grass seed secured	186
Acres of Sudan grass resulting from special campaign	1,283
Estimated yield of Sudan grass in bushels	2,769
Farmers assisted in securing winter wheat seed	279
Bushels of winter wheat seed secured or located for farmers	33,237
Acres of winter wheat planted as result of special campaign	101,470
Farmers assisted in securing seed rye	66
Bushels of rye seed secured for farmers	158
Acres seeded as a result of special campaign	393
Farmers assisted in securing barley seed	22
Bushels of barley seed secured for farmers	3,895
Acres of barley seeded as a result of special campaign	1,650
Number of farmers assisted in securing seed potatoes	180
Bushels of seed potatoes secured for farmers	3,190
Acres of potatoes seeded as a result of special campaign	1,461
Estimated yield of additional acres in bushels	127,700

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[6] Hendry, G. W., Bean Culture in California, *ibid.*, Bull. 294.

Number of farmers assisted in securing seed beans	379
Number of bushels of seed beans secured for farmers	1,439
Acres of beans seeded as a result of special campaign	14,264
Yield of additional acres of beans in bushels	215,300
Live Stock.	
Additional cows bred as a result of campaign	200
Additional sows bred as a result of campaign	290
Additional sheep placed on farms	7,530
Food Conservation	
Persons assisted in home garden work	7,222
Farmers given information for storing plants and vegetables	15,001
Quarts of fruits and vegetables canned by adults	41,450
Canning demonstrations held for women	102
Pounds of fruits and vegetables dried as a result of campaign	125,000
Miscellaneous	
Crops saved by fire protection	$130,000
Crops saved by grasshopper campaigns	$40,000
Butterfats saved by feeding demonstrations	$20,000
Farmers assisted in securing loans on tractors	88
Increased acres cultivated due to tractor campaign	6,200
Farmers assisted in securing power sprayers	48
Public markets established	11
Value of crops sold in such markets	$210,000

Defense Programme of Farm Bureaus for 1918

Since the beginning of the war the number of farm bureaus organized in counties has increased from seventeen to thirty-six. Of these, thirty-one counties have farm advisors installed. There are 20,000 farmers in California who annually pay a dollar to belong to the farm bureaus. The counties in the farm bureau system now cover 85 per cent of the farms of the state. For the first time it has become possible to reach the farmers of California by personal contact through a state-wide organization.

The food production campaign for 1918 was launched at a conference of the county farm bureaus in California held at Berkeley, March 11, which was attended by three representatives of each farm bureau and by the farm advisors and assistants.

President Wilson sent the following message to the conference which was received with much enthusiasm:

> I am greatly interested in the emergency food-production conference to be held at Berkeley. It is highly important that we do everything within our power to secure sufficient supplies for our own population and Army and for the nations with which we are associated. I trust the conference will find ways of overcoming the difficulties inherent in the situation and that its labors will be fruitful of large results and thereby aid in bringing this war to a successful termination. May I not suggest that you read to those assembled at the conference, as a message from me, the recent statement I made to the farmers of the nation through the conference at Urbana?

The day was spent in discussion of definite detailed plans for the forthcoming season. These were summarized in a reply telegram addressed to President Wilson:

> Berkeley, Cal., March 11, 1918.
>
> The President:
>
> The members of the emergency food production conference, representing the agricultural interests of the State through the 36 organized county farm bureaus, received your telegraphic message with great enthusiasm and have adopted the following State-wide program for the season of 1918:
>
> 1. To urge the building of a silo and planting of sweet sorghums for silage and for sirup on every dairy farm in California.
> 2. To put out on 20,000 farms one good brood sow or two pigs in order to increase the amount of pork that the State will raise. At least 40,000 more hogs will be so raised.
> 3. To develop boys' agricultural clubs in every community in California where supervision can be provided. Three thousand boys were already growing crops. Thousands more are to join from this campaign.
> 4. To bring the women of California who live on farms into active organization as a part of the county farm bureaus in order to increase food conservation.
> 5. To handle farm labor siuation by eliminating unnecessary activities and working harder on essential ones; also further better distribution of labor by means of Federal employment stations and coöperation of farm bureaus.
> 6. To investigate immediately the seed supply of the State in order to be assured that an adequate amount is on hand to plant the 1918 crops.

7. To protect grain fields and grass ranges from fire by means of county-wide protective organizations under farm bureaus and thus eliminate a quarter of a million dollars annual loss in foodstuffs.

Please rest assured of our hearty coöperation for the successful prosecution of the war.

B. A. Teagarden, *Chairman,*
Roger L. Rice,
J. L. Harean,
B. H. Crocheron, *State Leader.*

These campaigns are now under way and will consume the entire time and attention of the farm bureaus and farm advisors during the present year.

Agriculture Club Work

In order to increase the amount of food being produced by the agriculture club members of the state, a continuous plan of work has been outlined to keep the members active through the entire year. Each member is to carry on a livestock feeding project during the winter when few crops can be grown. In order to fit in with the increased pork production campaign the formation of pig clubs has been especially emphasized. Early spring crops, such as potatoes, follow the annual project, succeeded in turn by such summer crops as beans and sorghums. The sorghum crops will furnish grain to feed a larger number of livestock the following winter. Special clubs, i.e., sheep and lamb clubs, have been organized to conserve orphan and twin lambs which normally are slaughtered in large numbers each spring.

The number of high school teachers of agriculture, coöperatively employed as district club leaders, has been increased from fifteen to thirty-four. The enrollment has already increased from 1879 boys in 1917 to 2389 boys and girls in 1918. Thousands more will enroll for planting summer crops.

Club members, especially those enrolled in agriculture in clubs, are proving to be excellent demonstrators of the best agricultural practices. By project feeding, pig club members are making net profits of from $5 to $10 per hog for 105 to 120 days' feeding, even with the present high prices of feeds.

Home Demonstration Work

Before the outbreak of the war three specialists were employed by the College of Agriculture for demonstration work among farm women. These traveled through the state giving advice on the conservation of farm products. With the passage of the war emergency bill for "stimulating agriculture and facilitating the distribution of products," the United States Department of Agriculture allotted $20,000 to California for demonstration work for farm and city women to be conducted through the College of Agriculture.

The state was then divided into nine districts, in each of which a woman was employed as demonstration agent. Since the bill did not pass Congress until late in August, it was October before the new appointees were at work in their districts. Four major projects occupied their main attention: (1) conservation of food by canning, drying, etc.; (2) the substitution of foods to take the place of wheat, meat, etc.; (3) the increase of home gardens on farms; and (4) the increase of small poultry flocks on farms. The demand for this type of work proved so large that the number of demonstrators was increased to eleven —as many as the funds permitted. During the year, 1342 demonstrations were given and 551 lectures delivered, or a total of almost 2000 meetings attended by 66,029 persons.

It became evident that it was impossible for a demonstrator to cover adequately several counties since the greatest efficiency of this work is achieved through personal visitation at the request of the people. It is agreed, therefore, during 1918 and 1919 to transfer the work from a district basis ebmracing several counties, to a plan whereby a county home demonstrator will be placed in a single county, through the coöperation of the county board of supervisors, by the provision of a plan similar to that by which farm advisors have been installed.

In order to secure a special organization through which the home demonstrator might reach the women of the county who desire this form of service, a plan has been devised whereby farm home departments of the farm bureaus are being formed in thirty-five counties; of these, nine are already completed. Women therein join the farm bureau on the same basis as men, but are expected to be particularly interested in the work for the benefit of the farm home. Demonstration meetings for the women will be held in every farm bureau center on an established monthly schedule when women county demonstrators are installed. It is expected that through an increased appropriation by Congress to the Department of Agriculture, funds will be allotted to California during the forthcoming year for the special furtherance of this enterprise in twenty counties.

School and Home Gardens

The school and home garden work has not been actively promoted in a general state-wide campaign, the College of Agriculture having contented itself with giving advice on conditions essential to success. Its purpose has been to promote gardens only where the local conditions warrant reasonable assurance of success. Obviously, the production of food is not increased by attempts which result in failure, no matter how praiseworthy the motive. The work has largely fallen upon O. J. Kern, Assistant Professor of Agricultural Education, who has coöperated with the Red Cross organizations in giving many lectures at schools on war gardens.

Land Settlement

The State Land Settlement Board, of which Professor Elwood Mead is chairman, has acquired, prepared and subdivided for settlement about 6400 acres of land at Durham, California. More than 1000 acres were seeded, chiefly to wheat and barley. The entire area, mainly devoted to pasture, will be settled and intensively cultivated before the end of 1918. In addition to its contribution to the food supply of California, it promises to exercise a marked influence on policies to be adopted for providing homes for soldiers after the war. Professor Mead has been called to Washington for a portion of his time to carry on this important reconstruction work.

Sanitation in Military Camps

During the summer and autumn of 1917, W. B. Herms, Associate Professor of Parasitology, was almost continuously engaged in investigating the sanitation of the seventy-three camps of the Western Department of the United States Army, particularly in regard to mosquitoes and flies. This work, which is the outcome of the mosquito survey of the state, was begun in 1916, in coöperation with the State Board of Health. This important undertaking led to Professor Herm's appointment as Captain in the Sanitary Corps of the National Army. The investigation will be continued and, it is expected, completed during the coming summer by S. B. Freeborn, Assistant Professor of Entomology. Professor Freeborn has recently been commissioned First Lieutenant in the Sanitary Corps.

Fire Control

The annual loss in grain, forage and timber by fire in California is estimated to be about $750,000, approximately equally divided among the three items. When war was declared there was no effective organization for the control of fires outside the national forests and national parks. The situation was discussed at a forestry meeting held October 13, 1917, in connection with the dedication of Hilgard Hall at the University. At this meeting the Forest Industrial Committee was formed, at the suggestion of the Division of Forestry. The committee consists of the State Forester, chairman, one representative each of the United States Forest Service and the Division of Forestry of the University of California and three representatives of the lumber industry. This committee has been the largest factor in securing unity of thought and action on the part of organizations interested in fire protection. It has actively conducted a state-wide campaign for better fire protection of the grain fields and grazing ranges. The four leading tractor and harvester manufacturers of the state have perfected adequate safety devices which have been tested by the Division of Agricultural Engineering. In various effective ways Woodbridge Metcalf, Assistant Professor of Forestry, has given much of his time to the study and promotion of methods of fire protection.

Fish Investigations

The Committee on Resources and Food Supply of the State Council of Defense, on April 10, 1917, directed the College of Agriculture to report upon sources and supply of fish in California. This the College of Agriculture was enabled to do, through E. J. Lea, Associate Professor of Nutrition and Head of the Food Laboratory of the State Board of Health, on May 10, 1917. The subsequent assignment of Dr. E. D. Clark, trained investigator in this problem, by the Bureau of Chemistry of the United States Department of Agriculture to the Federal Food Administration for California made it unnecessary to continue further investigations. Dr. Clark was assisted in obtaining two trained men, and they have since used the laboratory of the Division of Viticulture.

Grasshopper Control

During the summer of 1917, the Division of Entomology made a grasshopper survey of the state in order to locate the breeding grounds of that insect. As a result of an extensive examination, county farm advisors, county horticultural commissioners and interested private individuals were instructed as to the possible danger of grasshopper attacks and the localities in which these attacks might arise. In addition, many demonstrations were made in the districts concerned. At the request of the United States Forest Service, the Division agreed to coöperate in the control of grasshoppers on the stock ranges of the Plumas and Lassen National Forests during the summer.

Bacillus botulinus

The *Bacillus botulinus* has caused at least nine deaths in California and Oregon during the past year, where improperly sterilized fruits and vegetables have been used. The Division of Viticulture has studied the death temperature of the organism under various conditions and has issued a brief statement. The usual methods of home canning have so far appeared to be safe.[7]

Utilization of Garbage

The utilization of city garbage as food for swine, as a war emergency product, has been thoroughly investigated by the Division of Veterinary Science. Four members of the staff have been engaged in the work. It was found that many of the cities of California, including such large municipalities as Oakland and San Francisco, were destroying a considerable part of this valuable hog food. Experiments were carried on in collecting the garbage from twenty-four families of ordinary means in the city of Oakland, from June, 1917 to January, 1918, and feeding it to hogs. The experiment showed that twenty-six pounds of ''residence garbage'' would produce one pound of live pork. At this rate there was being destroyed in the bay cities enough hog food to produce 1 per cent of the total food supply of the population of these cities. This waste material has gradually been utilized until during the month of April, 1918, the City Engineer of Berkeley estimated that 400 tons of green garbage collected in that city was fed to hogs.

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[7] Cruess, W. V., Home and Farm Canning, *ibid.*, Circ. 158.

Serums and Vaccines

Garbage feeders invariably lost a high percentage of their pigs soon after weaning, which at times reached 50 per cent or more. All garbage feeders in the bay vicinity were visited on several occasions by various members of the staff and advised of the proper method of prevention of this loss by use of anti-hog-cholera serum. At present the loss from this cause in garbage fed hogs practically has been eliminated. Anti-hog-cholera serum has been manufactured and distributed in as large quantities as in the past, but more has been personally administered by members of the staff with uniformly successful results. Investigations of chicken diseases have continued and during the spring of 1918 a larger amount of chicken-pox vaccine was distributed than ever before, with highly successful results.

Nitrogen Fixation

The problem of nitrogen fixation was assigned to the Division of Soil Chemistry and Bacteriology at the special request of the Committee on Sources of Nitrogen of the Council of National Defense, of which Mr. F. G. Cottrell of the United States Bureau of Mines is chairman. The committee asked for the transfer of C. B. Lipman, Professor of Soil Chemistry and Bacteriology, to Washington to study this special phase of the problem. It was finally decided, however, that the work could be just as effectively done as a part of the activities of this station. The object is to determine whether the total and available nitrogen for plants could not be increased by the proper supply of energy to the soil and through other technical methods. The project is now well under way and, it is believed, for the first time the problem of nitrogen fixation by soil organisms has been studied, employing all possible safeguards against error required by the modern appreciation of statistical and physical chemical methods.

Stored Grains

The College of Agriculture was represented on a committee with Professor Doane of Leland Stanford, Jr., University to assist the Food Administration in the preservation of foodstuffs. Inspections have been made of the larger warehouses of the San Francisco Bay region, Southern California, and the San Joaquin and Sacramento valleys to determine what insects are present and the possibility of injury. Wherever losses were noted in any foodstuffs the attention of the warehouse man in charge was called to the fact and through him word was sent to the owner of the goods with recommendations for control measures. When possible, assistance has been given in practical control work, such as directions for the building of fumigating houses, practice of fumigation and in the use of insecticidal washes.

Economic Poisons

It is estimated that the agriculturists of the state paid out approximately two and a half million dollars during 1916 in the purchase of materials for the control of pests. Steps were taken by G. P. Gray, Assistant Professor of Entomology and Chemist in the Insecticide Laboratory, to ascertain whether acute shortages were apt to occur in the future and whether in some cases it might be desirable to substitute cheaper materials for the more expensive. It was concluded that there is no actual shortage of arsenic in the United States, the high price of this important economic poison being artificial, and that conditions in respect to copper sulphate, sodium cyanide and carbon bisulphide are as good as could be expected under the circumstances, but that an actual shortage of sulphur may occur.[8]

Squirrel Campaign

The College of Agriculture has been coöperating with the State Commission of Horticulture in a state-wide campaign against the ground squirrel and other rodents whose depredations cause vast losses in food products. In this work the College of Agriculture has been assisted by the Museum of Vertebrate Zoology of the University, which has prepared two important publications.[9] M. R. Miller, Assistant Chemist in Insecticide Control, has analyzed the more important brands of commercial rodent poisons. A great variation in poison content was found. The results which have been published will, it is believed, cause the standardization of rodent poisons.[10] A promising new method of squirrel extermination has been developed by Professors J. S. Burd and G. R. Stewart of the Division of Agricultural Chemistry in their investigation of fumigation methods.

Potash

Although started prior to the war, the Division of Agricultural Chemistry has carried on an extensive study of kelp with particular reference to the production of potash. Eight publications have been issued, which it is believed, have been useful in the development of the local potash industry. Investigations have also been made, and the results published, on the possibility of tule as a source of potash.[11]

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[8] California State Commission of Horticulture, Monthly Bulletin, March, 1918.

[9] Dixon, Joseph, Control of the California Ground Squirrel, Univ. Calif. Agr. Exp. Sta., Circ., 181; Control of the Pocket Gopher in California, *ibid.*, Bull. 281.

[10] Calif. St. Comm. Hort., Mon. Bull., April, 1918.

Cotton

In the summer of 1917 the War Department emphasized to the United States Department of Agriculture the necessity of increasing the supply of long staple cotton for its programme of aeroplane manufacture. Experiments had already been conducted by the Division of Agronomy at the Kearney Ranch, Fresno, in recognition of the importance of this crop.[12] On October 19, 1917, a preliminary meeting was held in Fresno under the auspices of the Farm Bureau to which all farmers interested in the planting of cotton were invited. More than one hundred attended this meeting, at which the salient facts of cotton production were presented and the desirability of growing this staple in the San Joaquin Valley set forth. A committee was appointed to organize a permanent cotton growers' association and to secure for prospective growers a supply of good Egyptian seed. Other meetings have been held from time to time, until now it seems that at least 6000 acres of this type of cotton will be planted in the southern San Joaquin counties. On February 14, 1918, a conference on the subject of cotton was held at Holtville. It is believed that 10,000 acres will be planted in the Imperial Valley the coming season as compared with 1000 acres planted last year.

Substitutes for Sugar

Between October, 1917 and May, 1918, G. A. Coleman, Instructor in Entomology, arranged the programmes and attended forty-three meetings for beekeepers in coöperation with Messrs. E. F. Atwater and G. S. Demuth of the United States Department of Agriculture. Sixteen counties in middle and southern California were covered by these meetings, which were attended by 1500 people. A partial bee range survey has been made of Santa Barbara and Monterey National Forests. Maps of locations and description of ranges for 6000 colonies of bees have been prepared from this survey. A complete survey has been made of Santa Cruz County showing favorable locations for 10,000 colonies of bees with a possible annual production of 2,000,000 pounds of honey.

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[11] Hibbard, P. L., Potash from Tule and the Fertilizer Value of Certain Marsh Plants, Univ. Calif. Agr. Exp. Sta., Bull. 288.

[12] Gilmore, J. W., Cotton in the San Joaquin Valley, *ibid.*, Circ. 192.

A campaign, mentioned elsewhere, to increase the possible supply of sugar by growing sweet sorghums has been undertaken. Professor W. V. Cruess has made a special investigation of the practical methods of producing sorghum sirup, while B. A. Madson, Assistant Professor of Agronomy, has reported upon the investigation of several years concerning varieties and culture of sweet sorghums.[13] Investigations by the Division of Viticulture have proved that grape juice may be cheaply and successfully preserved with sulphurous acid until it can be transferred to a central point for sirup manufacture, and that the sulphurous acid can be completely removed and a very palatable sirup, suitable for cooking and table use, made from the juice with calcium tartrate as a by-product.

Vegetable Preservation

The home drying, salting and pickling of vegetables have been investigated and the results used as a basis for several publications. The commercial drying of vegetables is now being studied and has resulted in interesting several companies in drying vegetables for the War Department. Professor Cruess has actively coöperated with the members of the Subsistence Division of the Quartermaster Corps of the United States Army. The lemon juice method for the home canning of vegetables has been further tested during the past season and previous conclusions as to its reliability confirmed.

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[13] Madson, B. A., Sweet Sorghum for Forage, *ibid.*, Bull. 293.

Wheat Production Conference

On August 27, 1917, Professor J. W. Gilmore attended a conference held under the auspices of the United States Department of Agriculture in Spokane, as a representative of the College of Agriculture, to consider with representatives of other mountain and coast states the methods of increasing wheat production. Subsequently a programme for increasing the production of wheat was laid out in California; first, by increasing acreage and, second, by increasing the yield per acre. Three general methods of increasing acreage were decided upon: further use of idle lands, irrigation of lands not otherwise suited to the growing of wheat, and by requesting farmers to substitute 10 per cent of the barley acreage for patriotic reasons. The increase of yield on existing acreage is to be brought about by better seed, more thorough preparation of the soil, greater care in seeding promptly and the application of fertilizers.

In response to a publicity campaign there was listed with the Division of Soil Technology 32,552 acres by owners and 39,000 acres by agents of owners. In addition, there were reported 265,850 acres by farm advisors, county horticultural commissioners, and others who were without authority to give leases or otherwise handle the land. Wherever possible to get the location and ownership of the last named tracts, they were investigated and in most cases were found to be used for pasture or other crops, or to be unsuited to production because of soil, climate or other reasons. Replies from 47 per cent of those who listed their land show that 8825 acres or 27 per cent listed by owners is now rented, and that 15,000 acres or 38 per cent listed by agents is rented. This gives a total rented of 23,825 acres, or 33⅓ per cent of the total 71,552 acres listed. No data are available regarding the land controlled by the 53 per cent of owners or agents who did not answer the letter of inquiry.

Irrigation

The assistance rendered by the Division of Irrigation Investigations to individuals and to particular enterprises has dealt mainly with increasing the irrigation of lands capable of producing grain and forage crops. A field survey of irrigation of wheat in California has been made.[14] Practical help has been given in laying out farm ditches and irrigation pipe lines, installing pumping plants and preparing land for irrigation. Twenty-five cases of this kind have been dealt with during the year, involving a total area approximating 2500 acres. As a result of a state-wide conference in Berkeley, April 17, 1917, Decision No. 4278 was obtained from the State Railroad Commission. This decision removed legal restrictions on emergency deliveries of surplus irrigation water by utility water companies. An emergency act drafted by the Water Commission and the Railroad Commission, in conference with the Division of Irrigation Investigations, removed legal restrictions from emergency deliveries of irrigation water by individuals and mutual water companies. With the assent of the State Engineer and of the Attorney-General, an appeal was sent through the State Council of Defense to irrigation districts, urging emergency irrigation deliveries to land owners outside of districts. After numerous conferences signatures were obtained to a stipulation which practically vacated, for the period of the war and a reasonable time thereafter, an injunction issued in 1903 against the opening of Lake Land flood water canal from Kings River. This waiver makes possible the watering of at least 30,000 acres. In coöperation with motor and irrigation machinery supply houses in San Francisco, a ruling was obtained from the War Priorities Board through the Federal Food Administration for California, permitting priority orders for motors, engines and pumps needed for irrigation of essential crops.

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[14] Adams, F., Extending the Area of Irrigated Wheat in California for 1918, *ibid.*, Circ. 182.

Investigations were instituted, on July, 1917, of a controversy between the people of Lake County and the Yolo Water and Power Company, involving the use of water of Clear Lake for irrigation. These investigations were the basis for an agreement obtained April, 1918, by the Federal Food Administration for California, by which 10,000 acres of rice will be irrigated in Yolo County in 1918 with water pumped from Clear Lake. The agreement entered into will be supervised throughout the season by S. H. Beckett, Assistant Professor of Irrigation Practice, acting as representative of the Food Administration. A small demonstration project is under way at Redding with a view to hastening the use of water made available by Anderson-Cottonwood Irrigation District canal. A field investigation of opportunities for temporary utilization of water wasted in Auburn Ravine from the power plant of the Pacific Gas and Electric Company has been made. The water users and owners were brought together in a controversy regarding the use of Clark Ditch in El Dorado County. Assistance was given in the settlement of a controversy over distribution of irrigation water in Orangevale Colony. A preliminary financial investigation of California irrigation, drainage and reclamation enterprises, which contemplate substantial expenditures during the war period, has been made. This inquiry is for the purpose of enabling the federal authorities to report on these projects when called upon by the Capital Issues Committee of the United States War Finance Corporation.

Seed Supply

Information was widely distributed concerning the regional adaptation of six leading varieties of wheat. For many years these varieties have been under investigation by the Division of Agronomy. Arrangements were perfected whereby millers, warehouse men and grain dealers agreed to set aside for seed good stocks of the pure varieties.

This was facilitated by the United States Grain Corporation. While the plan was not wholly satisfactory much good was accomplished.

Through coöperation with the United States Department of Agriculture, Professor W. W. Mackie and several assistants promoted in many parts of the state the treating of wheat and barley by standard methods for the prevention of smut. Laboratory work has been carried on to determine the effectiveness of these treatments. The party is now engaged in following up the results through the harvest.

In the spring of 1917 and again in 1918, J. W. Gilmore, Professor of Agronomy, secured from as large a number of farms as possible, data on the amounts and kinds of seed needed for planting, and the amounts and kinds of seed on hand for sale. These data, showing lists of farmers and seed firms from which seed could readily be secured, were sent to all farm advisors. Where it was found a shortage existed, dealers were notified to supply this shortage. Although it was sometimes difficult to keep an adequate report of the amounts and kinds of seed on hand by dealers, in general the system has been successful. It has also been helpful in enabling farmers having stocks of good seed on hand to dispose of them at reasonable prices.

Cultural Methods

The investigations of the Division of Agronomy carried on at Davis, Stockton, Fresno and El Centro during the past year, as heretofore, show the influence of the thorough preparation of soil upon the yield of wheat and barley, especially during those periods when the rainfall is subnormal. Thus the grain crop of 1917 at Davis showed but little effect of the deficient rainfall, while a normal yield during 1918 is at present indicated although it is the second year of deficient rainfall. In order to bring this matter to the attention of farmers as thoroughly as possible a Cereal Field Day was held at the University Farm at Davis on May 18, 1918.

Intercrops and Winter Cover Crops

At the University Farm, Davis, in May, 1917, feterita, dwarf milo and two varieties of beans were planted in a two-year-old and in a nine-year-old deciduous orchard. Neither of these orchards was irrigated. All of the crops made a splendid growth and produced heavily in the two-year-old orchard without any apparent injury to the trees. None of the crops made a successful growth in the nine-year-old orchard. It thus seems possible to produce a great deal of food material in young orchards without detriment to the trees, even under dry land conditions. What crops would thrive in a nine-year-old orchard if irrigation were available is being determined this summer.

Careful estimates made early in 1917 indicated that there were in southern California about 77,000 acres of young irrigated citrus orchards that might be intercropped without injury to the trees. Intercropping, especially with beans and to some extent with potatoes and grain sorghums, was advocated. A survey made later in the season by Professor R. S. Vaile indicated that while normally only 25 per cent of such groves are intercropped, this last year at least 45 per cent have been so handled. About 30,000 acres were planted to beans, 3000 to grain sorghums, 2000 to potatoes and 1000 to corn. A special study of the results obtained has been published.[15]

The investigations of the Citrus Experiment Station show that the cheapest source of nitrogen is through the use of leguminous, winter cover crops.[16] In view of the great war demand for commercial nitrogenous materials, the station has advocated the extensive use of such cover crops with marked results.[17] The fact brought out by the orchard trials, that potash and phosphoric acid have shown but slight effects and can therefore be omitted from citrus groves for a few years, has been emphasized.

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[15] Vaile, R. S., Intercropping of Young Irrigated Orchards, *ibid.*, Circ. 174.

[16] Metz, M. W., Green Manure Crops in Southern California, *ibid.*, Bull. 272.

Fruit Drying Industry

During the season of 1917, W. L. Sweet, Instructor in Pomology, and other members of the Division of Pomology conducted an inquiry into practices followed by the leading growers of deciduous fruits. Special attention was given to the cost of different operations, and the total cost of drying and curing the various deciduous fruits. This survey has made available information enabling those just engaging in the business to begin employing the best practices and also enabling many experienced growers to improve their methods.

Sugar Beets

The shortage of sugar and the known relation of curly top or blight disease of beets, caused by the bite of a leaf hopper, to the production of sugar beets throughout the western third of the United States have caused R. E. Smith, Professor of Plant Pathology, to redouble his efforts to the end that practical methods of control may be secured. H. H. Severin, Instructor in Entomology, has been relieved of all teaching and other research duties to give his whole time to the study of this destructive leaf hopper. In May, 1917, the station issued a circular of information, including estimates of cost of production which were submitted to the committee of the United States Food Administration, which also reported on the price the grower should receive for sugar beets.[18] Professor R. S. Vaile also made a special report on conditions in southern California. It was foreseen that owing to the conflict in Europe the sugar beet supply would become a more prominent question than heretofore; consequently investigations have been under way bearing upon the possibility of producing sugar beet seed in California. Promising results have been obtained. A large quantity of sugar beet mothers, or stechlings, has been obtained and trial plantings have been made at Los Alamitos, Oxnard, Arlington, Riverside, San Jacinto, Victorville, and Bishop.

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[17] Kelley, W. P., The Fertilization of *Citrus*, *ibid.*, Circ. 171.

[18] Adams, R. L., Fundamentals of Sugar Beet Culture under California Conditions, *ibid.*, Circ. 165.

Potato Production

During the winter of 1917, several conferences were held upon the outlook for potatoes during the approaching year. It was deemed inadvisable to undertake any campaign for increasing the acreage of potatoes since it seemed probable that the high prices then ruling and the general agitation for planting in home gardens would cause the supply to be maintained. As was anticipated, a sufficient supply of potatoes was produced to meet existing needs and in some localities an overproduction was apparent. Steps are now being taken to promote the production of potatoes during the season of 1918, since there is some danger of a reduced acreage due to relatively low prices which have ruled during the last few months.

Nutrition Studies

The war has occasioned, through the use of food substitutes, new demands upon the Division of Nutrition. Analyses have been made at the suggestion of the Federal Food Administration of California of burro meat, Belgian hares, bolted flour from grain sorghums and other meals offered as wheat substitutes, including barley flour and barley breakfast foods. Nutrition surveys of all state institutions have been made for the purpose of revising and regulating diets to conform to the policy of the United States Food

Administration. These surveys cover a population approximating 20,000. Every state institution is now using some preparation such as Diamalt in bread making, in place of sugar, without impairing the quality of the bread produced.

Feedstuffs for Live Stock

The incentive to adulterate feedstuffs has been brought about through their greatly increased cost. Examination of a large number of these adulterated feedstuffs has been made by the Division of Nutrition, thus preventing producers from being defrauded. Fifty individual studies of new feedstuffs, some of them involving several analyses, have been made, among which may be mentioned by-products of barley flour, condensed whey, peanut by-products, raisin seed, O. C. Meal, spinach stalks, salt bush seed, water grass seed, artichoke silage, beet top silage, bean straw silage, Egyption corn bran and middlings, buckwheat by-products, tree moss, liquid garbage, and tule grass. A circular on minor feedstuffs for domestic animals has been published.[19]

Although not a product of wide commercial importance, it has been found that buckeyes may be used for poultry and hog foods where occurring in sufficient abundance to warrant. By a simple process the bitter principle of the buckeye can be eliminated. This method consists in soaking in a solution of 1 per cent lye over night. The produce is afterwards thoroughly washed, dried and ground. Good results with poultry have been obtained when the processed material constituted 25 per cent of the mash ration.

Production of Wool

A campaign has been conducted to increase the rearing of farm flocks and to lessen the heavy losses of newly born lambs on the ranges. To this end an extended survey of sheep ranges of the state and a close study of the methods of handling sheep at lambing time were made by R. F. Miller, Assistant Professor of Animal Husbandry. A plan for a lambing shed was prepared and has been widely distributed.[20] A demonstration has been made at University Farm, Davis, which shows that old ewes with broken-down mouths may be transferred from the ranges to valley ranches, thereby increasing materially the amount of wool and mutton produced in California.

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[19] Woll, F. W., Feeding Stuffs of Minor Importance, *ibid.*, Circ. 167.

Pork Production

In order to promote the production of hogs, representative animals from experimental lots which had been fed to determine the comparative economy of heavy and light grain rations on pastures, were exhibited at the various hog raising centers of the state. These meetings were attended by one hundred and fifty-five persons. Great interest was created and lively discussions of feeding methods resulted.

Poultry Production

The College of Agriculture has been coöperating with the Federal Food Administration of California and the Bureau of Chemistry of the United States Department of Agriculture in a study of the production and marketing of poultry. In various ways, such as the publication of circulars, personal addresses, use of lantern slides and personal visitations by women home demonstrators, the College of Agriculture has sought to extend poultry raising to farms and regions where foods can be cheaply grown, and to stimulate the practice of keeping a limited number of chickens in city backyards for the purpose of utilizing garbage. Seventy sets of blueprints and specifications for farm poultry houses and backyard poultry houses, designed by the College of Agriculture, have been sent out. The use of potatoes, barley, rice and rice products has been stimulated by investigations of the Division of Poultry Husbandry with a view to reducing the use of wheat. In addition to the usual short courses given at Davis and in southern California, a special course of instruction was given to the ten women demonstrators, February 11 to 15, 1918, inclusive, and another was given April 3 to May 3, 1918, inclusive, as a part of the Emergency Summer Course held at the University Farm, to prepare teachers of agriculture in the high schools in accordance with the Smith-Hughes Act.

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[20] Miller, R. F., and Fermery, G. E., Lambing Sheds, Circ. 188.

Dairy Products

It has been shown that the amount of protein in skim milk equals that in the beef consumed in the United States. The Dairy Industry Division of the College, at the request of the United States Department of Agriculture, has sought to promote the more extensive use of cottage cheese, thus using skim milk which would otherwise be put to a less important purpose, such as the making of casein for sizing paper. In furtherance of this plan, a special course in cottage cheese making was given. A course of instruction has been outlined with a view to preparing women to fill positions as milk and cream testers in dairy establishments now employing men for this work.

Short Courses for Women

Since May 15, 1918, the College of Agriculture has established and conducted two courses for women, of four weeks' duration each, the object being to develop leaders for groups of women agricultural workers in the state. These courses were held at the University Farm at Davis. In addition, at the request of the Woman's Land Army of America, the College of Agriculture has conducted a special class for women machine milkers at the University Farm.

DEPARTMENT OF BOTANY

The Department of Botany has devoted considerable time and has expended a certain portion of its appropriations for war work, particularly as approved by the Pacific Coast Research Conference in connection with the State Council of Defense. An appropriation of $700 has been received from the Council and has been expended on investigations of the possibilities of a supply of rubber from native plants. This work has been carried out by H. M. Hall, Associate Professor of Economic Botany, and T. H. Goodspeed, Assistant Professor of Botany. Their preliminary report has been published in *Science* of May 10, 1918 (vol. 47, no. 1219, pp. 452–454) under the title, ''An Emergency Supply of Rubber.''

The plants investigated belong to *Chrysothamnus* and related genera. There is no well established common name for the plants but they are included in the general category of ''rabbit-brush.'' They are sometimes also known as ''golden brush.'' These are large plants which grow in abundance on the desert area and in the Great Basin generally. It has been found that some of the species carry 10 per cent rubber. However, those which are sufficiently common to make their utilization possible carry not more than 5 per cent.

This is not sufficient to be of interest commercially with rubber at its present price. If, however, the importations of raw rubber should be curtailed through enemy action, this emergency supply existing within the border of the continental United States could be drawn upon. While there is not enough to supply the need for even a single year, the total amount nevertheless would be considerable. The rubber obtained from these plants is of good quality, though not equalling the quality of the best imported Para. The study is to be continued in order more definitely to locate the supply of the shrub and to work out various problems in connection with harvesting.

Other minor matters under consideration by the Department of Botany, either separately or in conjunction with other departments, have reference to unused food plants either for human beings or domestic animals, such as the buckeye, in particular, or for use in industries or scientific research, such as the economic value of certain seaweeds, particularly as substitutes for agar.

W. A. Setchell, Professor of Botany, is a member of the subcommittee on Botanical Investigations of the Pacific Coast Research Conference. W. L. Jepson, Associate Professor of Dendrology, is a member of the State Council of Defense.

DEPARTMENT OF CIVIL ENGINEERING

Beginning with the academic year 1918–19, the Civil Engineering College will administer a four years' curriculum in Military Engineering leading to the degree of Bachelor of Science in Civil Engineering. This course of study is designed to prepare students for admission to the Corps of Engineers, United States Army, by competitive examination under the rules of the War Department.

C. G. Hyde, Professor of Sanitary Engineering, was a member of the Engineering Commission (G. A. Elliott, Chairman, Professor C. D. Marx of Stanford University, the third member) appointed by Colonel I. W. Luttle in charge of Cantonment Division, to design sanitary works for Camp Fremont, Menlo Park, California. Professor Hyde is now a Captain in the Sanitary Corps.

A. C. Alvarez, Assistant Professor of Civil Engineering, is assistant to the Manager of the University Military Bureau.

A. J. Eddy, Assistant Professor of Civil Engineering, is Captain in the Coast Artillery, stationed at the San Francisco Presidio.

C. T. Wiskocil, Assistant Professor of Civil Engineering, under the direction of Charles Derleth, Jr., Professor of Civil Engineering and Dean of the College of Civil Engineering, and assisted by J. R. Shields, Engineer in Testing Laboratory, conducted 250 individual tests on airplane materials during the year in the presence of government inspectors. Professor Wiskocil left for Washington May 15, to assist in the study of concrete ship construction. He was employed throughout the summer by the United States Emergency Fleet Corporation, Concrete Ship Construction Department.

E. D. Hayward, Instructor in Civil Engineering, is Second Lieutenant in the Sanitary Corps, stationed at Camp Fremont.

Principally under Valdemar Arntzen, Expert Mechanic in Civil Engineering Laboratory, the Civil Engineering Department during 1917–18, coöperating with the Department of Astronomy, assisted in designing and perfecting range finders for Captain Dinsmore Alter, C. A. R. C., formerly an instructor in the Department of Astronomy. From January to April, 1918, Mr. Arntzen and his assistants constructed numerous pieces of apparatus for Captain Stratton, formerly Professor of Psychology, and now in the United States Signal Corps. This equipment, to be used in the Aviation Schools at San Diego and at Kelly Field, Texas, consists of a set of three tambours, one pneumograph tube, one hand steadiness apparatus, one tilting chair and one reaction time apparatus. The equipment was made in coöperation with the Department of Psychology.

DEPARTMENT OF CHEMISTRY

Upon the outbreak of the war the Department of Chemistry held a meeting at which the instructors and students, both graduate and undergraduate, signed a pledge to work on any problem that might be assigned to them. Forty men were thus enrolled to devote their time to research and other work necessary to the prosecution of the war. The character of the tasks was varied: some were submitted by the National Council of Defense, some came from the state, some from chemical manufacturers in California, and some were suggested by members of the staff as timely or of value to California, either by virtue of its natural resources or its needs. A number of the men of the department have devoted a large part of their time to this work, some of them giving twelve to sixteen hours a day. A large measure of success has been attained in many cases.

While the problems submitted by the National Council of Defense must for the present be kept secret, not all of the investigations are of a secret nature. For example, the investigation of potash has been a subject of importance. As a fertilizer, potash is indispensable. While California soils may not as yet be in great need of this chemical, large quantities are used in the East. Prior to April, 1917, nearly half a million tons were imported. Only a small amount was made in this country. At present 200,000 tons are produced in the United States, with California in the front of the industry.

Long before the war there was a small production of potash made from seaweed. At first the drift seaweed was collected from the beaches, dried and burned, and the ash containing a small per cent of potash was sold as a fertilizer. Later this industry developed on a greatly increased scale, and at this writing many corporations maintain large factories. It was soon found, however, that the drift seaweed would not suffice for the greater demands, and complicated and ingeniously contrived machines were used to harvest the seaweed from the kelp beds in the ocean. Elaborate and extensive plants were erected to work up this seaweed into various products, for the industry had expanded beyond the making of potash. Bromine, iodine, various organic bodies, such as acetone, butyric and propionic acids, were all made in large quantities from the seaweed; much of this work was done by graduates of the Chemical Department, in and outside the laboratories of the University of California.

Other sources of potash are the saline lakes and deposits in the southeastern part of the state, mainly in San Bernardino and Inyo counties. Considerable capital has been invested in some of these enterprises and the production of potash from these sources has reached large proportions. Just as in the case of seaweed, other products in addition to potash are obtained from these lakes and deposits, among them being salt, carbonate of sodium, sulphate of sodium, chloride and sulphate of magnesium, borax and boracic acid, and other bodies. In these instances, also, the laboratory of the Department of Chemistry has been of real service.

The ocean offers the same type of problems as do the saline lakes. Potash is a constituent of the ocean water as are nearly all other known salts. One of the questions taken up recently in the laboratory of the department was the separation of potash salts from ocean water. For several months this work has engaged the attention of a number of instructors and students who have studied the matter in both a theoretical and practical way. The largest source of potash, of course, is the ocean, but the difficulties of separating the other constituents of sea water offer many a baffling problem to the chemists of America.

In some cases nature has solved the difficulties, and it is for this reason that hitherto the Germans have had a monopoly of the potash industry. Ages ago a part of the ocean was confined near Stassfurt, and processes of fractional crystallization went on, separating the salts formerly in solution into solid beds of relatively pure materials. Attempts have been made to reproduce these conditions by varying the rate and character of evaporation of sea water to obtain the various salts, potash, magnesium, etc., in a similar condition of purity. Some practical results have been obtained and considerable quantities of potash and magnesium are being manufactured by some of the salt companies on San Francisco Bay.

A number of years ago, one of the former students of the Department of Chemistry, then instructor, devised a process for dissipating fogs and mists by means of a high tension electric discharge. This process, first used for cleaning the air of acid particles that were a nuisance and money loss in various acid factories and metallurgical works, then extended to purifying air of dust and other small particles, has become one of the most important industrial processes, and is used all over the world. It was installed by another of the graduates of the University of California at a cement factory at Riverside to eliminate the dust. When examined the dust was found to contain potash; a method was developed to collect it, and now it is used all over the United States for this purpose. Already it has changed the character of some of the cement mills—potash is now the main source of profit, and the cement merely a by-product.

Other sources of potash are rocks, minerals, and ashes of plants. From the last named source small amounts of potash are obtained by a simple proces sof lixiviation.

Another set of problems studied in the department's laboratory pertains to the production of cyanides. While cyanides of potassium and sodium are used to a considerable extent in California as insecticides and in the metallurgical industries, none has been made in the state. New methods of production promise to be of great value in converting certain raw materials into cyanide. Closely related to this aspect of the war work of the Chemistry Department is the question of producing cyanimide, a derivative of cyanogen and ammonia, a chemical made in enormous quantities in Europe for use as a fertilizer. Some of the earliest work on this material was done in the department's laboratory, where the conditions necessary for its preparation were ascertained.

Other electrochemical products of importance studied in the departments are caustic soda, chlorine and various chlorine derivatives, steel, various ferroalloys, such as ferrochrome, ferromanganese, ferrosilicon, magnesium, copper, and zinc. Graduates of the University have been connected with the development of each of these industries.

Under the stimulus of the war, the manufacture of another class of chemicals, all of considerable technical importance, has been begun in this state by the department's graduates. This class includes organic preparations, such as anilin colors, benzoic acid, metol, saccharin, and phthalic anhydrids. Previously most of them were imported from Europe; now many of them are made in our own state.

Two of the University's graduates have devised methods for the synthetic preparation of important organic compounds. One has succeeded in making glycerine from sugar; another in preparing tartaric acid from starch. Both of these bodies are relatively expensive substances. Glycerine has heretofore been prepared from fats; tartaric acid, from grapes. The synthetic methods produce them from relatively cheap materials, viz., starch and sugar. Inasmuch as sugar can be made from starch, the importance of these processes is self-evident.

California petroleum offers another fruitful field for chemical investigations. The use of this material for the manufacture of gasoline, kerosene, lubricating oil, and asphaltum is familiar to every one, but the employment of petroleum as a source of raw material for the manufacture of chemical products is not so apparent. Without writing in detail it may be pertinent to mention toluol, the starting point of trinitrotoluol, one of the most important explosive materials in the present war. Other problems that have been worked on in connection with petroleum are methods for increasing the amount and quality of the gasoline and kerosene fractions and for improving the character of the lubricants. All are of great importance in the present crisis.

The disposal of wood waste affords another field for research. In California most of the wood waste is burned in order to get rid of it, although in a few cases potash is obtained from the ashes. At various times wood distillation plants have been erected, usually on a small scale. Attempts have been made to convert this material into alcohol and other products. The character of the products varies greatly with the variety of wood employed. One of California's graduates has shown that the stumps of the redwood yield relatively large amounts of phenol, or carbolic acid, of an unusual degree of purity. It is from this substance that many of the high explosives are made; lyddite, melinite, ecrasite, shimosite are all derivatives of phenol.

Many experiments have been made in the laboratory of the department on the numerous trees and shrubs indigenous to California, and new chemical products of the most varied nature have been extracted. Oils, waxes, tanning materials, substitutes for rubber, alkaloids and other drugs, coloring matters that can be used for dyes, and numerous other materials have been separated and their properties studied.

The manufacture of essential oils from native and cultivated plants offers a large field for research. Various investigations in this area have been carried out in the laboratory of the department and some industries of this nature have been established under the direction of University of California graduates.

The above résumé indicates briefly the character of the problems that the Department of Chemistry has been endeavoring to solve. In addition, it has attempted to compile a list of the chemical industries of the state with a view to obtaining data for assisting the technical men in their problems. An extensive correspondence is conducted. Advice is given to inquiring visitors who ask for information or assistance. Some of these questions entail considerable research, but it is always the endeavor of the department to be of assistance to the citizens of the state and to help them in every way possible.

The difficulties of the work have been increased by the inability to obtain necessary apparatus and supplies. Many of these materials were made in Germany, and it is only recently that the American manufacturers have been able to supply the demand. Added to this was the greatly increased cost of supplies that were obtainable. The California State Council of Defense came generously to the aid of the department. Without their assistance it probably would have been impossible to carry out the programme. Another handicap lay in the fact that a large proportion of the staff had left for the national service, greatly increasing the burden of those who remained. But each man has done his duty, has speeded up as much as possible, has worked longer hours, has done his work in the face of great difficulties, and has not become discouraged or apathetic.

From an original number of forty-five, the Department of Chemistry has contributed more than a score of members of its staff of instruction to the military and other branches of the government during the war emergency. Their names will be found listed in another portion of the War Record.

Gilbert N. Lewis, Professor of Physical Chemistry and Dean of the College of Chemistry, has been commissioned Major in the Gas Service of the United States Army, in France.

Edmond O'Neill, Professor of Inorganic Chemistry, Director of the Chemical Laboratory, and Acting Dean of the College of Chemistry, is Director of the Naval Consultation Board of California, and is also engaged in chemical investigations for the State Council of Defense.

W. C. Bray, Associate Professor of Chemistry, is a member of the subcommittee on Inorganic Chemistry of the National Research Council.

J. H. Hildebrand, Associate Professor of Chemistry, is Captain in the Ordnance Department.

Merle Randall, Assistant Professor of Chemistry, is a member of the subcommittee on Inorganic Chemistry of the National Research Council.

G. E. Gibson, Instructor in Chemistry, is engaged in chemical research for the National and State Councils of Defense.

W. L. Argo, Instructor in Chemistry, is with the Bureau of Mines.

G. E. K. Branch, Instructor in Chemistry, is with the 50th Gordon Highlanders, Canadian Army.

R. F. Newton, Assistant in Chemistry, is with the Field Artillery.

T. P. Stewart, Instructor in Chemistry, is First Lieutenant, Chemical Service Department.

DEPARTMENT OF ECONOMICS

In October, 1917, the Department of Economics first gave tangible evidence of its ability to aid the government in war work. At that time the Labor Adjustment Board, investigating the strike then paralyzing shipbuilding, invited C. C. Plehn, Professor of Finance on the Flood Foundation, H. R. Hatfield, Professor of Accounting on the Flood Foundation, Jessica B. Peixotto, Professor of Social Economics, and F. R. Macaulay, Instructor in Economics, to its conference, with the result that Mr. Macauley presented an index to the board showing the increase of the cost of living in this district. I. B. Cross, Associate Professor of Economics on the Flood Foundation, later conducted for the Board a detailed inquiry on the cost of living between October 1, 1917, and March 1, 1918. In this work he was assisted by Felix Fluegel, and G. F. Mitch, both Assistants in Economics.

In February, 1918, Professor Hatfield, aided by Professor Cross, Mr. Macaulay, E. A. Kincaid, Instructor in Economics, and Mr. Fluegel, prepared a report for the United States Shipping Board on the labor conditions, possible output, etc., of the California shipbuilding plants. The Shipping Board characterized the work as "an invaluable service to the Government in carrying out its shipbuilding programme." Since that time Professor Cross has been in constant touch with the largest shipbuilding plants and some of the unions in connection with the shipbuilding problems.

At the suggestion of the Ordnance Department in Washington, the Department of Economics has conducted four ordnance training schools, the purpose being to give preliminary training to men who are expected ultimately to reach the grades of non-commissioned, and in some cases, of commissioned officers in the Ordnance Service. The course of study at Berkeley covered the principles of storeskeeping, calculating methods of accounting, military organization, military correspondence, military law and military courtesy. One hour a day was devoted to drill. The time allotted for the course was six weeks. Those in charge were Professor Hatfield, Stuart Daggett, Professor of Railway Economics on the Flood Foundation, Mr. Macaulay, C. C. Staehling, Instructor in Accounting, and Dr. H. B. Drury.

Professors Hatfield and Daggett are members of the Subcommittee on Economics of the State Council of Defense. This committee has published a report on "The Relation of State Banks to the Federal Reserve System," dealing with the necessity of concentrating credit facilities during the war. Professor Daggett also spent several months in preparing a report to the State Council of Defense on "The Iron and Steel Industry about San Francisco Bay with Special Reference to the Available Supply of Raw Material."

Professor Plehn has been a member of the Second and Third Liberty Loan committees of Berkeley and the University of California. He was a delegate to the Joint Conference of the Western Economic Society and the City Club of Chicago, held in Chicago, June, 1917, to discuss the "Financial Mobilization for War." He was also a delegate from California by appointment of the Governor of California to the Congress of States to discuss the "Coördination of Federal and State Taxation," held in Atlanta, Georgia, October, 1917, and called with the official sanction of President Wilson. He prepared a paper on "War Finance" read before the Commonwealth Club of San Francisco and published in the Transactions of that body; and also a pamphlet on "War Finance in Great Britain, France, Germany and the United States," written at the request of the San Francisco Patriotic Liberty Loan Committee of 1000 and used as part of its propaganda for the Third Liberty Loan.

Professor Daggett and Mr. Macaulay have served as assistants to the Berkeley Exemption Board, No. 1, while Professor Cross is one of Berkeley's Four Minute Men.

C. E. Brooks, Assistant Professor of Insurance, has served as Actuary and Advisor to the United States Bureau of War Risk Insurance, preparing various bulletins, determining questions of policy and interpreting the Soldiers' Insurance law.

Professor Peixotto is a member of the Subcommittee on Women in Industry of the National Council of Defense and also a member of the same committee of the State Council of Defense. During the first half-year of 1918 she was on leave of absence from the University as Executive Chairman of the Child Warfare Department of the Women's Committee of the National Council of Defense. During the first semester Professor Peixotto and Miss Lucy W. Stebbins, Associate Professor of Social Economy, conducted a Red Cross Training School for Home Service at the University, in which work they were assisted by Professor Cross and Mr. Macaulay. During the second semester a similar school was conducted in San Francisco under the direction of Solomon Blum, Associate Professor of Economics, and Dr. Louise Morrow, Assistant in Social Economics. Professor Stebbins is a member of the Home Service Committee of the Berkeley Branch of the Red Cross, of the University Auxiliary of the Red Cross, of the Advisory Board of the Women's Land Army and of the Executive Committee of the Berkeley Chapter of the Red Cross. She is also one of the traveling lecturers on Home Service authorized by the National Red Cross Committee.

Lincoln Hutchinson, Professor of Commerce on the Flood Foundation, is in Washington acting as Head of the Export Division of the War Trade Board. H. S. Shuey, Lecturer in Economics, has been a member of the San Francisco Third Liberty Loan Committee and of various Red Cross committees. Professors Hatfield and Daggett are spending the summer in Washington, engaged in work of the highest importance for the War Industries Board.

UNIVERSITY EXTENSION DIVISION

The Bureau of Correspondence Instruction of the Extension Division has given enlisted men a special reduction of 40 per cent on all fees in the various courses and has provided special classes to meet the needs of men in service. The Extension Division has also coöperated with all official bodies in ''drives'' about the bay counties and in Los Angeles, and has been of genuine assistance in providing junior officers for the naval forces of the country through its courses in Navigation and Nautical Astronomy.[21]

The Bureau of Lectures gave twelve lectures in Los Angeles on ''Problems Arising Out of the War.'' Similar lectures have been given elsewhere.

The Bureau of Public Discussion has been instrumental in directing the debating activities of the high schools of the state upon war subjects, not only giving the debaters special knowledge on international topics, but being of great educational value to the thousands of persons who have heard these debates.

The Bureau of Visual Instruction has circulated stereopticon slides and moving picture films designed to inform the public concerning war service in the form of liberty loans, etc. It has prepared and circulated throughout the state a monthly lecture on current events dealing principally with war conditions.

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[21] See report on Training for U. S. Navy and Merchant Marine, p. 23.

DEPARTMENT OF GEOLOGY AND MINERALOGY

Shortly after the entrance of the United States into the war the problem of the supply of certain minerals essential to war industries became very important. The situation was particularly serious because previously we had depended to a large extent on importation from distant lands. The war produced a scarcity of merchant ships, and the demand for all obtainable ship tonnage for the transportation of men, munitions, food and other war necessaries to Europe became most urgent.

It was known that California contained some of these important mineral substances, though before the war little had been done to secure them because they could not be laid down with profit in the industrial centers in competition with the imported material. The extent of our resources was not even roughly known, nor was it estimated what yearly contribution California could make to the necessary industrial supply. Prospectors and miners in general were not familiar with the desired minerals, their appearance, mode of occurrence, characteristics, or the promising localities for their discovery.

Following the appointment of G. D. Louderback, Professor of Geology, as Chairman of the Committee on Geology and Mineral Resources of the State Council of Defense, all of his time not demanded by necessary University duties was given to organized systematic investigation of certain California war mineral problems both in the field and in the laboratory. In this work he was aided by E. F. Davis, Instructor in Mineralogy and Geology, F. S. Hudson, Teaching Fellow in Geology and Mineralogy, and N. L. Taliaferro, graduate student.

The chief object of investigation this year was manganese. Over one hundred mines and prospects, lying in eighteen counties, have been examined and their nature, probable extent, origin, and availability investigated. The field and laboratory work on this subject led to definite recommendations to the government boards, based on possibilities of production. A brief paper, presenting some of these conclusions, was published by the *Mining and Scientific Press* on March 30. There was also prepared a tabular report by countries, arranged for quick reference to the various properties examined and their most important characteristics, and a more extensive report on the geology and prospective value of these properties. The latter reports, carrying considerable confidential information for the use of the government, have not been published, but copies have been placed in the hands of the appropriate government bureaus and boards, and of the National Research Council. The department was assured by them that the results and the mode of presentation were very satisfactory and of special value at the present time.

A great deal of energy has been expended on work that does not lead to definite reports, but which is believed to be of public value in assisting the development of war minerals. Some of the activities may be outlined as follows.

1. Advising prospectors as to the nature and value of the mineral substances they have found. Hundreds of samples have been examined, both in the field and in the laboratory. In addition, the prospector is advised which minerals are worth following up, how best to do it, etc.

2. Calling the attention of prospectors and others, by letter and personal conference, to materials of special value in the war industries that are likely to occur in the regions in which they are working.

3. A case of California war minerals has been set up in the Geological Museum, especially to illustrate to the prospectors, most of whom are not familiar with the war minerals, the appearance of the different mineral types and different grades of ore, and of the commonly associated rocks. Descriptive labels accompany the specimens, and personal explanation and advice are often given the visitors.

4. We have sought to learn of conditions in any part of the state that interfere with or prevent the operation of properties, or the marketing of products, with the idea of taking such steps as seem feasible to overcome or obviate such conditions. A number of these cases have been placed in our hands, and several have been successfully remedied.

5. We have sought to engage the coöperation of other agencies in the study of special questions related to war minerals, supplying data and samples to assist such studies. the mineral industry. Requests for such information are continually coming from manq quarters.

6. We supply, in so far as we are able, information that may be needed by committees, government departments, or other agencies that are seeking to solve scientific, commercial, or administrative problems affecting or affected by

Recently, plans have been maturing for a more definite basis of coöperation with the United States Bureau of Mines, the United States Geological Survey, and the Mining Department of the University, with all of which we have coöperated in an informal way during the last year.

Letters of approval of the work of the department have been received from Mr. S. Paige, Acting Chief Geologist, and Mr. G. O. Smith, Director of Survey, of the United States Geological Survey, from Mr. Edmund Newton, in charge of manganese investigations of the United States Bureau of Mines, and L. H. Duschak, Superintendent of the Berkeley Branch Station, and from Mr. Whitman Cross, Vice-Chairman of Division of Geology and Geography, and J. C. Merriam, Chairman of Division of Geology and Geography of the National Research Council.

A. C. Lawson, Professor of Mineralogy and Geology, and Dean of the College of Mining, is a member of the Subcommittee on Geology of the Pacific Coast Research Conference.

DEPARTMENT OF HOME ECONOMICS

Household Science

Food Administration Work

During the special term of five weeks, May 21 to June 23, 1917, two courses were offered in the Household Science Division of the Home Economics Department: the Red Cross course in Home Dietetics, by Josephine E. Davis, Assistant Professor of Household Science, and Miss Doris Daniels; and an Emergency Normal Course intended to give volunteer leaders of clubs and communities information and training in methods of presentation of the message of food conservation. Agnes F. Morgan, Assistant Professor of Household Science, was in charge.

There were registered in the Red Cross course one hundred and fifty women, of whom one hundred and twenty finished the work and received the Red Cross Certificate. Several of these young women have since entered the service as Nurses' Aids.

In the Emergency Normal Course there were registered twenty-one well qualified women, of whom seventeen finished the work. Most of these women are now active directors of food conservation work in their own communities.

During the Summer Session of 1917, a popular dietetics course largely devoted to problems of food conservation was attended by fifty nurses and forty-seven housewives.

On Sunday, July 1, 1917, a Half-Hour Programme on Food Saving was held in the Greek Theatre, under the auspices of this division. Mrs. R. O. Moody, Mr. A. H. Naftzfier and Professor Morgan spoke to a large audience on various phases of the subject

Food Experiments and Analyses

During the fall term of 1917, Professor Morgan and Edith L. Brown, Laboratory Assistant in Household Science, made a large number of analyses and digestibility experiments on whale meat in the hope of establishing the usefulness as human food of this hitherto wasted material. The senior dietetics class coöperated in this endeavor, as well as in a similar set of experiments upon ostrich meat, samples of which were sent to the department by the British and American Mercantile Company of El Centro. A bulletin on the results of these experiments is contemplated.

Public Speaking

In October, Professor Morgan met classes of women in Berkeley and Oakland for the purpose of aiding them in public speaking preparatory to the Food Pledge Drive of the last week of October. At Dean Stebbins' request, the housekeepers for the girls' clubs and boarding houses met during November with Professor Morgan to discuss ways and means of obeying the behests of the Food Administration.

Since April, 1917, all members of the staff, as well as several of the students, have given frequent talks and demonstrations before women's clubs, schools, churches, and other organizations in the interests of food conservation.

War Emergency Bulletins

The series of *War Emergency Bulletins* was begun in November, 1917. The five following have been issued in mimeographed form, and about 800 copies of each distributed:

No. 1. Practical Hints on Food Conservation. 5 pages.
No. 2. Milk, a Cheap Food at any Price. 4 pages.
No. 3. The Honor Ration. 3 pages.
No. 4. Suggestions for Instruction in Food Values through Window Exhibits. 11 pages.
No. 5. The Fuel Value of Food in Every Day Terms. 7 pages.

Dietary Survey

The Home Economics Department has coöperated fully with the National Dietary Survey now being carried out by Dr. C. F. Langworthy of the United States Department of Agriculture, four family studies, and two group studies having been finished and sent in since November, 1917. Besides these a careful record of consumption of food at the Associated Women Students' Counter for three weeks was kept by Miss Beatrice Marks, and will be shortly forwarded to Washington. This record shows an interesting reaction by the women students following the beginning of the Food Administration courses in February, 1918.

Food Conservation Courses

In February, 1918, the following courses as requested and outlined by the Food Administration, were given. A series of lectures on Food and the War, given by Professor Morgan, covered a period of twelve weeks. The total enrollment was six hundred and thirty-seven, of whom four hundred and ninety-two finished the course with credit. In the course on Fundamentals of Food and Nutrition in Relation to the War, two lectures by Professor Morgan were given each week for twelve weeks. The enrollment was sixty. The twelve weeks' course on the Use and Conservation of Food combined lectures with laboratory practice. This was supervised by Miss Davis assisted by Miss Alice B. McLear. Sixty-three were enrolled.

At the end of the term, students registered in all the courses were asked to hand in their names, home addresses, summer plans and to indicate their willingness to assist in Food Administration work. Over four hundred students responded, and the data secured was sent to the office of Ralph P. Merritt, Federal Food Administrator of California.

Final Rally

In the last week of the term, May 6 to May 10, a series of five lectures, summarizing as far as possible the material presented in the lectures on Food and the War was given. From thirty to fifty persons were present at each of these lectures.

Besides the distribution of the pamphlets sent us by the United States Food Administration, copies of the *War Emergency Bulletins* above mentioned were distributed to each of the students registered in the Food Administration courses.

Speakers' Seminar

At the request of several of the students in these courses an evening seminar in public speaking was held weekly during the term. Practice in short talks on food conservation at these meetings gave many students confidence to address outside clubs and schools.

An exhibit under glass, changing each week, and illustrating the material covered by the lectures in Food and the War, has been maintained in the lower corridor of the Library Building. Miss Alice H. Metcalf has been in charge.

Volunteer Student Service

Through the recommendation of Mr. Merritt, the United States Food Administration has asked Professor Morgan to act as state secretary for California in directing the activities of the students in food conservation courses in the various colleges and state normal schools. Professor Morgan was asked to provide plans and an organization for the coherent effectiveness of this potential force. She expects to coöperate with the already developed county organization worked out by Mr. Merritt and Miss Ebbets. Besides the University of California there are seventeen other institutions in the state which have been giving courses on the food problem. Miss Elizabeth Bridge has been asked to act as assistant in this undertaking.

Conference with Dean Arnold

On April 15, in the Home Economics Building on the Campus, a conference of representatives of all the universities, colleges and normal schools of California was called by the department at the request of the United States Food Administration. Dean Sarah Louise Arnold of Simmons College, a representative of the Collegiate Section of the United States Food Administration, spoke on the further use of women trained under the plan of Food Conservation courses. The meeting was attended by delegates from Stanford University, the University of Southern California, Mills College, Los Angeles Normal School, San José State Normal School, and also from the normal schools at Fresno, Chico, and San Francisco. A valuable spirit of coöperation among the workers present was established at this conference.

Dean Arnold addressed a large meeting of students in Wheeler Auditorium the same day upon the spirit of *noblesse oblige* as applied to service for the state in matters of conservation by university trained women.

Division of Household Art

In the summer of 1917, during the special term of five weeks from May 21 to June 23, four courses under direction of Mary F. Patterson, Assistant Professor of Household Art, were given by the instructors in Household Art, assisted by senior and graduate students of this division and five Red Cross volunteer instructors.

Two of these were clothing courses, one of which comprised the making of hospital garments and comfort bags in accordance with Red Cross specifications for civilian relief work. In these courses mature women intending to offer volunteer work were enrolled. The third was a Red Cross course in the Preparation of Surgical Dressings in which eighty-four students enrolled. Twenty-five of this number came from rural districts and small towns, seven of these representing Indiana, Kansas, Nevada, Washington, Arizona, Utah, and British Columbia. Twenty-three students were recommended to the Women's Bureau of the American Red Cross as instructors in the Preparation of Surgical Dressings, receiving their certificates from Washington. Six of these became instructors for the courses in Surgical Dressings undertaken by the women students of the University Red Cross at Hearst Hall during the second semester of 1917–18. Twenty-four others were recommended to organize circles in Red Cross work in their home districts in California.

The fourth course offered suggestions for organization and administration of women's war work, housekeepers' institutes and the establishment of home industries in rural communities. Fifty women representing rural communities in several other states were enrolled.

During the fall term, August to December, 1917, members of the Textile class tested samples of wool submitted by the manufacturers to the Women's Bureau of the American Red Cross in San Francisco. Reports were sent to the chairman of the Women's Bureau as to the percentage of poor wool, and wool substitutes used, as well as to the spinning quality of the yarn.

In the spring term, January to May, 1918, a study of costs of raw materials was carried on by thirty-five students enrolled in House Management, each member of the class making a careful survey of the daily cost of food per person in homes or sorority houses, schools, state or county institutions throughout the bay district.

Ten seniors and graduate students in Household Art offered their practice teaching in Berkeley and Oakland schools, where the work consisted of making garments for civilian relief according to Red Cross specifications.

DEPARTMENT OF HYGIENE

The University of California Infirmary has shared its clinic and hospital facilities with the School of Military Aeronautics, offering every available assistance not only with its equipment but with its medical staff and nurses.

In the early part of the war, Dr. R. T. Legge, Professor of Hygiene and University Physician, with the assistance of Dr. A. M. Meads, Associate University Physician and Lecturer in Hygiene, and now Captain in the Medical Reserve Corps, conducted the physical examinations of some three hundred men for the First Officers' Reserve Training Camp at the Presidio.

Through this department, Ambulance Company, No. 2, U. S. A., now at Allentown, Pennsylvania, was organized from the student body of the University. This company later became a battalion by the addition of two other companies from eastern universities, but the official title of No. 2, known as the University of California Battalion, still remained. The officers, Major Alvin Powell and Captain A. M. Meads, are members of the Infirmary staff. Two other members of the staff have also joined the colors; Lieutenant (Junior Grade) Milton Schutz, Ophthalmologist in the Infirmary, is now in the United States Navy, and Lieutenant G. F. Stoodley, Dental Surgeon, is assigned to the School of Military Aeronautics.[22]

Three of the staff nurses, Miss Sarah W. Cheek, Miss Theresa Casenave, and Miss Thea Hauge, are Red Cross nurses in active service—one in France, the others in base hospitals in the United States.

The Department of Hygiene has provided instructors in the Red Cross courses and has trained several hundred men and women in First Aid and Home Care of the Sick. These courses were conducted in the Summer School, the intersession, and during the academic year. Members of the staff have also conducted several courses in First Aid and Home Care of the Sick under the auspices of the Berkeley Chapter of the American Red Cross. These activities were carried on in a creditable manner by the following: Drs. Paroni-Meads, Assistant Professor of Hygiene and Physician for Women; C. L. McVey, Physician for Men; Kate Gompertz, Physician for Women and Assistant in Orthopedic Surgery; Ruby S. Cunningham, Instructor in Hygiene and Associate Physician for Women; Mrs. R. R. Storer, Assistant Physician for Women, and the Misses Ethel Sherman, Superintendent of Infirmary; B. R. Steeves, Assistant in Hygiene, and Laura Carins, Assistant in Hygiene. Miss Sherman is also member of the State Committee for the American Red Cross Nursing Service.

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[22] Since this report was written, Dr. Legge has been commissioned Captain in the Medical Reserve Corps and has been detailed for service at the School of Military Aeronautics located at the University. He is continuing to serve the University, however, as Professor of Hygiene and University Physician.

The Infirmary staff made all the physical examinations for men entering the 1917 Summer School Military Camp, conducted by Major, now Lieutenant-Colonel Nance; also for men entering two naval courses, given under the auspices of the University, besides examining recruits for various training camps, ordnance courses and a women's land company.

The Infirmary staff has rendered valuable services in immunizing men and women who have entered the Y. M. C. A., Red Cross, and other agencies, against smallpox and typhoid.

Four members of the department are members of the executive committee of the local chapter of the American Red Cross and have materially aided in the work of the Berkeley chapter.

Dr. Legge is Director of First Aid under the Bureau of Military Relief of the Pacific Division of the American Red Cross and has organized and promoted instruction in First Aid and Safety in Industry. The object of this work is to change the attitude of the public towards accidents, and to prevent unnecessary suffering and its economic losses.

Another activity interesting the Department of Hygiene, and to which the administrative head has given considerable attention, is the development of a course of Occupational and Vocational Training for the Rehabilitation of Crippled Soldiers and Sailors. It is expected that the authorities at Washington will recognize not only the central location of the University of California, but its available resources to carry on successfully this important work.

DEPARTMENT OF MECHANICAL AND ELECTRICAL ENGINEERING

The shops of the Department of Mechanical and Electrical Engineering have become veritable war laboratories. The installation of a new steam turbine and a steam boiler of small capacity, the addition of three steam engines of representative type, as well as internal combustion engines of the marine, stationary and automobile types for experimental work in the Steam and Power Laboratory have served effectively to meet the demands of the hour. Plans for the coming year include the addition of a chair in Marine Engineering and Naval Architecture, also new courses in Automobile Engineering and Aeronautics, both closely allied to the present need for training in military engineering.

C. L. Cory, John W. Mackay, Jr. Professor of Electrical Engineering, Consulting Electric Light and Heating Engineer, and Dean of the College of Mechanics, is Assistant Director of the Division of Electrical Power Supply at the United States Government Explosive Plants. At present he is stationed at Charleston and Nitro, West Virginia, where the Nitro Smokeless Powder Plant is being constructed. Professor Cory is also a member of the Committee of Engineering and Inventions of the State Council of Defense.

B. F. Raber, Associate Professor of Mechanical Engineering, has been prominent in work connected with the School of Military Aeronautics.

R. S. Tour, Assistant Professor of Gas Engineering, is First Lieutenant in the Ordnance Reserve Corps, at present assigned to duty in the vicinity of New York City.

H. B. Langille, Assistant Professor of Machine Design and Mechanical Drawing, is a Lieutenant in the Navy, stationed at the United States Naval Training School, San Pedro.

F. B. Pernot, Assistant Professor of Electrical Engineering, is Captain in the Signal Reserve Corps, assigned to duty at the Bureau of Standards, Washington.

B. M. Woods, Assistant Professor of Theoretical Mechanics, is President of the Academic Board of the School of Military Aeronautics.

B. R. Van Leer, Instructor in Mechanical Engineering, is First Lieutenant, Engineer Reserve Corps, Camp Lewis, Washington.

G. L. Greves, Instructor in Electrical Engineering, has given instruction in Military Transmission of Intelligence to University and other students. During the 1918 Summer Session he gave a six weeks' elementary course in radio communication. It is planned to continue this work in the fall semester, with instruction in radio transmission, including commercial and military equipment, elementary telegraphy, telephony and circuit work. Code practice will be included.

D. W. Dickie, Lecturer of Marine Engineering and Naval Architecture, has been practically in charge of the instruction in Marine Engineering and Naval Architecture in the course of naval preparation since January 5, 1918, and, since May 20, of the engineering course of the United States Shipping Board School at the University.

A. B. Domonoske, Instructor in Mechanical Engineering, has given instruction in the engineering course of the United States Shipping Board School at the University.

L. B. Clark, Mechanic in Electrical Laboratory, has been a member of the technical staff of the School of Military Aeronautics since July 15, 1917.

E. J. McDonald, Mechanic in Steam and Gas Laboratory, has been an assistant in the laboratories in the engineering course of the United States Shipping Board School since May 20.

MEDICAL SCHOOL

The University of California Medical School has somewhat modified its curriculum in order to better prepare students for their work in the Army and Navy. It has also contributed many of its staff for active government service, chief among whom may be mentioned:

Dr. H. C. Moffit, Professor of Medicine and Dean of the Medical School, Major and Chief of Medical Service at Camp Travis, Texas (until February, 1918); Dr. E. S. Kilgore, Assistant Clinical Professor of Medicine, Major; Dr. J. L. Whitney, Assistant Clinical Professor of Medicine, Captain in the Air Service; Dr. J. B. Frankenheimer, Instructor in Medicine, Major; Dr. E. J. Best, Instructor in Medicine, Captain; Dr. E. H. Falconer, Instructor in Medicine, Captain; Dr. J. M. Rehfish, Assistant in Medicine, Lieutenant; Dr. W. W. Behlow, Assistant in Medicine, Lieutenant, U. S. N.; Dr. Lovell Langstroth, Instructor in Medicine, on local exemption board; Dr. L. H. Briggs, Instructor in Medicine, on local exemption board; Dr. G. H. Evans, Assistant Clinical Professor of Medicine, Chief Medical Examiner on the State Advisory Board, No. 5; Dr. S. H. Hurwitz, Assistant Clinical Professor of Medicine, assisting Dr. Evans; Dr. G. E. Ebright, Assistant Clinical Professor of Medicine. President of the State Board of Health.

Department of Surgery

At the suggestion of the Surgeon-General of the Army, Dr. T. W. Huntington, Emeritus Professor of Clinical Surgery, made arrangements whereby selected groups of medical officers from the United States Army would be instructed for a period of one month in the surgical treatment of fractures, wounds and shock. On March 12, 1918, the first class of twelve Medical Reserve officers, followed by a second group on April 16, received instruction from members of the University of California Medical School, aided by faculty members of the Stanford University School and by faculty members of the Stanford University of Medicine.

The Department of Surgery began the organization of Base Hospital Unit, No. 30, and gave intensive instruction to a considerable number of the enlisted personnel.

The following doctors have gone forth from the department for immediate government service:

Alanson Weeks, Instructor in Surgery; W. I. Baldwin, Instructor in Orthopedic Surgery; H. C. Naffziger, Instructor in Surgery; F. C. Lewitt, Instructor in Laryngology, Otology and Rhinology; H. S. Thomson, Instructor in Surgery; L. P. Howe, Instructor in Surgery; L. C. Abbott, in the Department of Surgery; Henry Horn, Assistant in Laryngology, Otology and Rhinology; W. A. Fisher, Assistant in Orthopedic Surgery; J. Visalli, Assistant in Surgery; J. H. Woolsey, Assistant in Surgery; F. H. Shook, Voluntary Assistant in Laryngology, Otology and Rhinology; A. G. Gibson, Voluntary Assistant in Surgery; Hudson Smythe, Assistant in Urology; C. A. Wills, Voluntary Assistant in Surgery.

Department of Pathology

The Department of Pathology is taking an active part in the instruction of Medical Reserve Corps officers, largely under the direction of Dr. G. Y. Rusk, Associate Professor of Pathology. These officers receive demonstrations in gross pathological anatomy, special emphasis being laid on the clinical-pathological correlation in autopsy technic, when opportunity offers, and in surgical pathology. It is also planning a series of investigations in the pathology of anaërobic infections, a better knowledge of which is now necessary for field surgery.

Department of Orthopedic Surgery

The Department of Orthopedic Surgery has given instruction in the handling of plaster, making of bandages, application of casts, etc. It has sent two doctors to the British War Hospital at Edinburgh, and has supplied its quota to Base Hospital Unit, No. 30. Dr. H. H. Markel, Assistant in Orthopedic Surgery, has examined several seamen from the Navy Yard.

Department of Pediatrics

The Department of Pediatrics has contributed the following men for the service: Dr. W. P. Lucas, Professor of Pediatrics, one of the organizers of the Medical and Social Service Work and Civilian Relief in France; Dr. H. K. Berkley, Assistant in Pediatrics, Army Medical Corps; Dr. Linton Gerdine, Assistant in Pediatrics, Navy; Dr. C. F. Gelston, Assistant in Pediatrics, aiding Dr. Lucas in France.

Department of Pathology and Bacteriology

The war work of the Department of Pathology and Bacteriology began, with the appointment of F. P. Gay, Professor of Pathology as a member of the Medical Section of the National Research Council and the California State Council of Defense, early in 1917. This was soon followed by an appointment as consulting expert under the American Red Cross for advice in medical problems arising in naval training stations. The first call in this line of duty came in June, 1917, from the Station on Yerba Buena Island, where a number of cases of cerebro-spinal meningitis had occurred among recruits. Professor Gay, being absent on vacation, delegated Ivan C. Hall, Assistant Professor of Bacteriology, to act in his stead. The latter coöperated with Surgeon P. S. Rossiter, U. S. N., Senior Medical Officer, and Assistant Surgeon A. J. Minaker in the establishment of a bacteriological laboratory and the development of suitable methods for the detection of meningitis carriers. Upwards of 8000 recruits have been examined with the result that even with a greatly increased and congested population there have been far fewer cases of cerebro-spinal meningitis during the year than during the previous twelve months. As soon as Professor Gay returned, he undertook the investigation of a skin reaction produced by injection of an extract of meningococcus cultures, which it was hoped would simplify the technic of isolating carriers. An article entitled ''The Occurrence of a Positive Intracutaneous Reaction in Meningococcus Carriers,'' was published in the *Journal of the American Medical Association,* January 26, 1918 (vol. 70, p. 215).

The preparation of the above mentioned extract led to an investigation by Miss Dolores E. Bradley, Assistant in Bacteriology, and Professor Hall of the question of suitable methods for the maintenance of meningococcus cultures, these organisms along with certain other highly parasitic bacteria having been found to require meticulous care in their repeated propagation under artificial conditions. Miss Bradley's work has resulted in a method of culture of meningococci which tremendously simplifies the problem of maintenance and transportation of these organisms for experimental and diagnostic purposes and in the manufacture of antimeningitis serum. Her article will appear over her name in the *Journal of the American Medical Association,* having been accepted under the title ''Simple Methods for Prolonging the Viability of Meningococcus Cultures.''

During the autumn of 1917 Professor Gay was appointed alternate director of the Metchnikoff, one of the four Pullman cars specially equipped by the American Red Cross for bacteriological laboratory purposes to be used in conection with outbreaks of infectious diseases in the national cantonments. A volunteer scientific staff was recruited, among whom were Professor Hall and Dr. C. L. A. Schmidt, Research Assistant in Pathology, in addition to Professor Gay. The initial trip in this laboratory car was made to Kelley Field No. 1, San Antonio, Texas, Professor Gay in the meanwhile having been appointed Major in the United States Army Medical Corps. A further investigation of methods for the simplification of technic in isolation of meningococcus carriers was made.

Certain investigations being conducted within the department have a definite bearing on problems of war, e.g., the preparation of taurin, its fate on injection, and use in the therapy of tuberculosis; these are being made by Dr. Schmidt and Mr. Thomas Watson under grants from the State Council of Defense and the George Williams Hooper Foundation for Medical Research. Dr. Schmidt has also engaged in investigations of certain anesthetics. Miss Ruth Stone, Edith Claypole Research Assistant in Pathology, has continued a study of the typhoid carrier condition, has aided Dr. Schmidt in the study of tuberculosis, and has made some preliminary studies on the lytic action of certain bile salts on pneumococci. Professor Hall in collaboration with Mrs. L. J. Ellefson and other research students has continued and completed certain phases of study in connection with the group of anaërobic bacteria which are so prominent in the causation of gaseous gangrene, the most pressing bacteriological problem of the war. In the same group of organisms is found the most dangerous cause of food poisoning, *Bacillus botulinus;* several instances have been investigated during the past year. It happens also that similar organisms introduce a factor of considerable error in the sanitary examination of drinking water and milk; a method has been devised obviating approximately 90 per cent of the errors due to this cause, publication of which is promised in the July number of the *Journal of Bacteriology* under the title ''The Elimination of Spurious Presumptive Tests for B. Coli in Water by the Use of Gentian Violet,'' and ''A Brief Note on the Use of Gentian Violet in Presumptive Tests for B. Coli in Milk with Reference to Sporulating Anaërobes.'' There was also published in *Science*, December 7, 1917 (vol. 46, p. 570), an article entitled "A Note on the Anaërobic Culture of Anaërobes at Higher Temperatures."

Department of Ophthalmology

The Department of Ophthalmology has examined the eyes of fifteen hundred applicants for the Aviation Corps, and has given considerable instruction to oculists who had entered the Red Cross units and branches of the Medical Reserve Corps.

Department of Neurology

The Department of Neurology has contributed 100 per cent of its staff to war work. Dr. R. L. Richards, Lecturer in Psychiatry, Dr. C. L. Tranter, Assistant in Neurology, and Dr. H. W. Wright, Assistant in Neurology, are all in service. Dr. Eva C. Reid, Assistant in Psychiatry, is abroad with the Women's Red Cross; Dr. V. H. Podstata, Lecturer in Psychiatry, has received a commission; and Dr. R. W. Harvey, Instructor in Neurology, and Dr. M. B. Lennon, Assistant Clinical Professor of Neurology, have served on advisory boards as medical examiners.

Department of Biochemistry and Pharmacology

The Department of Biochemistry and Pharmacology has been chiefly engaged in the study of the properties and actions of Tethelin, the growth-controlling substance from the anterior lobe of the pituitary body which has been shown to stimulate the healing of otherwise slowly healing wounds. This substance was the important discovery of Dr. T. Brailsford Robertson, Professor of Biochemistry. The substance having only recently been discovered, many features of its action are still obscure, and these are being worked out as rapidly as means and facilities permit. The experiments on the various aspects of the growth of animals are very laborious, as may be judged from the fact that during the past two years over seven thousand weighings of animals treated with Tethelin have been made, together with some thirty thousand weighings of control animals or of animals receiving other substances suspected of exerting action upon the growth of tissues. The statistical handling of these figures is in itself a very onerous task. The feeding and care of so many animals has been a great work and expense; yet the numbers employed have been insufficient to enable the department to elucidate the various actions of Tethelin as rapidly as is desirable. Nevertheless distinct headway has been made, although our results are still far from complete.

In collaboration with Dr. E. L. Barney of the Department of Surgery a series of experiments upon the action of Tethelin on chronic ulcers has been carried out with striking success. Ulcers of from two months to eleven years standing, previously treated without success by a variety of methods, were in every case cured by treatment with Tethelin. The maximum number of applications required, in a case of eleven years standing, was twenty.

The University of California having leased its patent rights in Tethelin to the H. K. Mulford Company of Philadelphia, the problem of practical manufacture has been taken up by them in collaboration with this department. A series of practical difficulties have been successfully solved and the large scale production of Tethelin is now well under way, so that it will soon be available for general medical and surgical use.

Another phase of research having strong bearing upon the war has been the thorough investigation by Dr. E. S. Sundstroem during the past three years, of the effects of high altitude upon metabolism. He has complied a monograph upon this subject from the results of very numerous and laborious analyses. These results which will shortly be published have a strong bearing on the question of aviation sickness. He has reached the conclusion, which would seem to be adequately supported by his results, that mountain sickness is due to an alkalosis, or increase in the alkalinity of the blood, which the body combats by an accelerated excretion of alkaline bases. This work is now to be extended and confirmed by further experiments, and to this end a large vacuum chamber has been constructed in which animals can be placed and kept at reduced atmospheric pressure for prolonged periods of time.

Department of Physiology

The most important war service of the Department of Physiology has been its regular work in the teaching of medical students, a number of whom after being drafted have been sent back by the military authorities to complete their medical education. Other work in instruction of the department is a necessary part of the education of nurses and of persons preparing for public health service.

In the latter part of April, Assistant Professor T. C. Burnett went to Camp Kearney to act as Associate Field Director in the American Red Cross. He has devoted the long summer vacation to this work.

The research work of the department all has more or less direct bearing on medical progress. Associate Professor S. S. Maxwell has been engaged in a study of the effect of certain drugs on the central nervous system. He has also made progress on a mechanical device for the rapid calculation of the proportion of the various food principles in dietaries and inidvidual ration allowances.

Assistant Professor Burnett has attempted the application of an internal lavage of wounds by the production of an increased lymph flow. Instructor Lillian M. Moore has studied intensively the effect on body temperature of certain brain injuries; two parts of this work are completed and will appear in the June number of the *American Journal of Physiology*. Assistant J. A. Larson has been engaged on the study of the effect of extracts of the endocrine glands on the growth of tissue.

Dr. E. S. May has made encouraging progress in the study of the pathway of temperature impulses in the spinal cord, a matter of great importance in diagnosis of results of certain sorts of wounds.

Los Angeles Medical Department

The Los Angeles Medical Department of the University became engaged in aviation examination work at the beginning of the war, and word has just been received from the War Department that it is desired again to start this work in Los Angeles for the entire Pacific southwest. The Los Angeles Medical Department has loaned a large portion of its hospital building to the Medical Examining Board of the Los Angeles District. The department has in contemplation a plan whereby graduate instruction may be given to medical officers in the near-by camps and cantonments, and also to such other physicians as are entering the service and likely to be called upon by the government to do a certain amount of hospital work.

Hooper Foundation for Medical Research

The Hooper Foundation offered a course in laboratory training, open to women, during the summer session of 1918, the object being to prepare individuals for technical positions in the base hospitals. There is urgent need for such technicians.

Each month a group of army officers is detailed to the school for intensive training. This work takes considerable time, but the teachers in charge have faithfully discharged all their other duties in addition to this new branch of service.

Dr. K. F. Meyer, Associate Professor of Tropical Medicine, applied himself to studying typhoid carriers, the epidemiology of dysentery infections on the Pacific Coast, types of pneumococci and streptococci found in cases of pneumonia, spore-bearing anaërobes responsible for gas gangrene, and toxin production of anaerobes concerned in wound infections. The school is now in possession of a complete series of anaërobes isolated from war wounds in France.

Dr. Alice Rohdé, Assistant Professor of Research Medicine, has been engaged in an experimental study of Dakin's Solution with particular reference to its action on ferment and autolysis of various tissues.

Dr. E. L. Walker, Associate Professor of Tropical Medicine, has investigated the treatment of carriers of andamoebic dysentery, and the chemotherapy of infectious diseases due to the acid-fast bacilli, with special reference to tuberculosis. He has also investigated the obscure etiology of certain infectious diseases—leishmaniasis, myositis, purulenta tropica, granuloma inguinale, etc., with material collected in South America.

Although Dr. C. W. Hooper, Assistant Professor of Research Medicine, has been called to the Hygienic Laboratory in Washington, Mrs. F. W. Robscheit, Fellow in the Hooper Research Laboratory, and Dr. G. H. Whipple, Professor of Research Medicine and Director of the Hooper Foundation for Medical Research, are continuing the work of studying pigment metabolism and anemia. Dr. Whipple, assisted by Messrs. Davis, Foster and McQuarrie, is investigating the peculiar condition of shock which develops in animals, caused by dilution of the blood plasma effected by plasmapharesis. The exchange of fluid between the blood and tissue has a definite bearing on clinical shock.

DEPARTMENT OF MINING AND METALLURGY

The facilities of the College of Mining, its teaching staff and several of the students have been employed in work thought to be of importance at this time. Supplementing these activities, experiments of value in devising ways and means of increasing the production of metals, the demand for which has been created by the war, have been greatly encouraged.

An exhaustive study has been made of the possibilities of concentrating, beneficiating and rendering available the low grade, manganese ores of California, particularly for use in the manufacture of ferroalloys. A very comprehensive and exhaustive report was prepared by E. A. Hersam, Associate Professor of Metallurgy, and published in the University of California Press, March 26, 1918 (Engineering ser., vol. 2, pp. 1–56). The great demand for copies of this work has led to its wide circulation throughout the state.

The treatment of antimony ores with particular reference to the temperature conditions of roasting was studied by G. McM. Ross, under direction of the department. The results of this work are now being utilized and are available for public information.

In coöperation with the California State Mining Bureau, a complete study of the possibilities of concentrating quicksilver ores has been undertaken, the results of which were made the subject matter of a thesis presented by W. W. Bradley for the degree of mining engineer in the University. A report will be issued by the California State Mining Bureau reviewing the metallurgical treatment of quicksilver ores, and embodying the results of his researches.

V. S. Chow, under the guidance of the department, investigated the conditions prevailing in the distillation and condensation of cinnabar ore. His conclusions are offered for the master's degree in metallurgy.

The electrical equipment for electrofusion experimentation has been completed and certain initial work in electrometallurgy has been carried on. This will be continued in the studies of ferroalloys.

An extended series of experiments to determine limitations in the oil flotation of manganese ores has been conducted by A. M. Sperry, a senior in the College of Mining.

In the hope of finding an economical and commercial method of concentrating chromite-bearing sands of the western coast, many elaborate experiments were conducted by E. V. Daveler and H. I. Altshuler. The results, while not immediately practical, are nevertheless sufficiently encouraging to justify continued investigation.

Dr. S. Trood and H. B. Hyder have, under the direction of W. S. Morley, Assistant Professor of Metallurgy, experimented on the possibilities of the direct reduction of iron, manganese and other ores; the information thus obtained led to the building of a test plant at Herroult, California. This type of work is vital to the solution of many problems in the economy of iron production in the West.

Mr. John Bouse, under the direction of Professor Hersam, conducted some large scale experiments to determine the possibilities of recovering and refining copper from waste metal such as brass, bronze and foundry sweepings, by hydroelectrolytic treatment. The result, thus far, has thrown light on the great problem of preventing waste of valuable metal and adding to the nation's supply of refined materials.

Charles A. Hyder has critically investigated the possibility of the manufacture of ferromagnesite used in the steel industry, hoping to be able to make an acceptable substitute for the magnesite heretofore imported from Austria.

Professor Morley has made a number of metallographic investigations on the steel parts used in airplane motors for the Hall-Scott Motor Company, and has also conducted detailed microscopic analyses of steel for the Equipment Production Engineering Department of the United States Signal Corps.

L. C. Uren, Assistant Professor of Mining, made some preliminary investigations of the blanketing action of certain froths in preventing evaporation losses of oils. He also delivered a course of eight lectures on the Mechanical Handling of Industrial Materials in the Ordnance Storekeepers' School on the Campus. He devoted four hours a week to the University of California Military Bureau as assistant manager. As assistant to the Fuel Oil Administrator of California, Professor Uren has undertaken special investigative work in the California oil fields. Professor Uren has been commissioned Captain in the Chemical Warfare Service and has been sent overseas.

The Berkeley Experiment Station of the United States Bureau of Mines, under the direction of Dr. L. H. Duschak, has devoted its energies during the last year exclusively to the investigation of problems bearing directly on the production of war minerals. A few advanced students of the College of Mining have collaborated in this work.

DEPARTMENT OF PALEONTOLOGY

J. C. Merriam, Professor of Palaeontology and Historic Geology, has been made chairman of the scientific branch of the State and National Council of Defense and is now in Washington, D. C., engaged in work of a highly important character for the National Council of Defense.

Chester Stock, Research Assistant in Palaeontology, is a member of the Pacific Coast Research Conference.

Mussel Survey

The chief work of the Department of Palaeontology has been its survey of mussels in California as embodied in its report to the Zoological Committee of the State Council of Defense.

The mussel survey of the coast of California was begun by C. A. Kofoid, Professor of Zoology. The general purpose was to encourage, so far as possible, the use of mussels as food, the object being to increase both the supply and the demand. In order to increase the supply, it was planned to induce the canneries along the coast to pack mussels. As a direct aid to the canneries, it was proposed to make a survey of the coast to determine where the shellfish could be found in abundance, and also to determine as far as possible the tonnage which the canneries might expect to collect at different localities.

Professor Kofoid began his work early in the summer of 1917. The publicity part of the work was delayed, however, due to the occurrence during the summer of several cases of mussel poisoning, raising the question as to whether it was safe to encourage further the use of mussels at this time.

The Bureau of Fisheries detailed two men, E. P. Rankin, Biologist of the ship "Albatross," and H. L. Kelly, Statistician, to work under Professor Kofoid's direction. Professor Kofoid also asked Bruce L. Clark, Instructor in

Palaeontology of the University, to help in the quantitative survey. Messrs. Rankin, Kelly, and Clark were directed to make a detailed examination of the quantity of mussels along the California coast. Mr. Kelly was assigned to the coast south of San Francisco, while the coast north of San Francisco to the Oregon line was assigned to the other two. This work was begun about the last of October, 1917. On account of winds and rains the survey in the north was discontinued about December 1.

A large part of Professor Kofoid's attention was given to the study of the mussel-poisoning problem, and a series of tests on guinea pigs was made in coöperation with the State Board of Health. The final conclusions were that mussel poisoning is not apt to occur provided the shellfish are collected in the proper places and at the right time of the year and that if the proper precautions are taken in collecting the mussels, they are a good substitute for fish and meats.

When Professor Kofoid entered the Sanitary Corps of the United States Army he asked Dr. Clark to continue the work of the survey, as chairman of the subcommittee. It was agreed that Mr. Rankin should be a member of the committee and that the two, with further coöperation from Mr. Kelley, should continue the work.

The main purpose of the survey of the distribution and abundance of the mussel, *Mytilus californicus,* along the coast of California is to determine its possible commercial utilization as a food product. It is proposed, in carrying on this investigation, to visit all the important localities along the coast where the mussel is found in any great abundance. The preliminary report on the distribution of *Mytilus californicus* in California by Dr. Harold Heath *et al.* to the California Fish and Game Commission is being used as a guide to the most important localities. At every locality where mussels are present in sufficient quantity, an estimate is to be made of the tonnage. This will be done by obtaining an estimate of the square yards of area covered by the mussels; from this, the weight can be computed with fair accuracy. Tests to determine the accuracy of such measurements have been made.

An estimate of the amount of meat per ton of the unshucked mussels is being made. This will be checked against canners' experience.

Notes are being taken as to the conditions under which the shellfish will have to be gathered at the various localities, and also as to the accessibility of the different localities to the market or canneries. The question of the rate of growth of the individuals has been studied in order to ascertain the proper lapse of time between successive collecting periods.

Those making the survey are securing all available information concerning the different cases of mussel poisoning, and also all possible data concerning the enemies of the mussels, and the parasitic diseases with which they may be infected.

A study is being made as to the size at which the mussel is most edible, and in this connection all data on the food value of the shellfish and methods of preparing it for the table are being collected.

Data as to period of spawning and the sexual characters of the species are being brought together, while suggestions will be sought as to methods of collecting, marketing and canning.

A campaign has been begun to acquaint the public with the possibilities of the mussel as a food. A series of articles on the mussel, its value as a food, etc., is being sent to about six hundred newspapers throughout the state. M. E. Jaffa, Professor of Nutrition, has consented to write a University bulletin, and has also prepared popular articles for newspapers on the food value of the mussel. Miss Jessica Hazzard, of the Los Angeles State Normal School, is bringing together all known recipes for cooking mussels, and is experimenting to discover new ways of preparing this food.

The results of her experiments also will be published as a bulletin.

Mr. Rankin has written to all the canneries along the California coast to find out whether they are willing to commence canning mussels. A number of replies have been received, and in every case the answer has been that if the canneries could be assured a market for the product they would be very glad to can them.

Further investigations of the cause of mussel poisoning have been conducted. While it is believed, with Professor Kofoid, that mussel poisoning is not a serious danger provided the necessary precautions are taken in collecting, yet it seemed best to have more positive evidence to present to the public as to the causes. With this in mind, arrangements were made with the State Board of Health to continue the experiments on guinea pigs. It is proposed to subject the live mussels to different degrees of heat for different lengths of time, after they have been taken out of the water, in order to ascertain whether or not the poisoning is really due to heat and exposure. Dr. T. B. Robertson, former Professor of Biochemistry of the University, has written a statement as to the possible character of the poisoning. A circular letter has been sent to all the physicians connected with the State Board of Health, asking for information concerning mussel poisoning.

CALIFORNIA COLLEGE OF PHARMACY

The College of Pharmacy has responded promptly to every government call for pharmacists, with the result that ninety-one graduates and students are in the military service of the country. A gold star, representing J. M. Simmons, class of '14, marks the service flag. A course in Military Hygiene and First Aid has been of material assistance to the military authorities about the bay counties.

Dr. H. M. Simmons, Associate Professor of Materia Medica and Pharmacy, and Lecturer on Toxicology, and Dr. H. B. Carey, Professor of Botany, Materia Medica and Physiology, and Instructor in Anatomy, Histology, Materia Medica and Therapeutics, are serving the exemption boards in their districts.

DEPARTMENT OF PHYSICS

The shop of the Department of Physics has been used for the construction of special apparatus and for repair work for the School of Military Aeronautics, for the Signal Corps under the direction of Captain G. M. Stratton, Professor of Psychology, and for the Shipping Board under the direction of E. E. Hall, Associate Professor of Physics.

L. T. Jones, Instructor in Physics, is First Lieutenant in the Aviation Corps; W. P. Roop, Instructor in Physics, is Lieutenant in the Naval Reserve; Grandison Garner, Assistant in Physics, is Second Lieutenant in the Army; C. E. Pierce, Assistant in Physics, is in Company B, California Engineers; H. O. Russell, Assistant in Physics, is in the Aviation Corps; L. A. Welo, Assistant in Physics, has been detailed to the Forest Testing Laboratory, C. H. Kunsman, Whitney Fellow in Physics, is civilian instructor in the School of Military Aeronautics; H. H. Anderson, Whiting Fellow in Physics, is enlisted in the Signal Corps; Paul Taylor, Assistant in Physics, is civilian instructor in the School of Military Aeronautics.

E. P. Lewis, Professor of Physics, has served in a confidential capacity for the National Research Council. He is chairman of the Physics Committee and a member of the Committee on Engineering and Invention of the Conference Committee of the State Council of Defense.

Professor Hall has carried out certain tests in connection with the research work of the United States Shipping Board.

DEPARTMENT OF PHYSICAL EDUCATION

Under normal conditions the activities of the Department of Physical Education for Men are largely of such a nature that they may be classed legitimately as military training. It is the aim of the department to maintain and improve the health of all male students, and to develop in them those mental, moral and physical traits imperative to success in military life. The method of procedure followed by the department during the past three years is cited by the office of the United States Commissioner of Education in his recommendations to the National Council of Defense as typical of the method of physical education to be followed throughout the colleges of the country as an aid in military training.

The chief war work of a specific nature in which the department has been engaged is that of organizing and conducting the athletics of the School of Military Aeronautics.

This department has also given special instruction to the University of California cadet officers for the purpose of fitting them to drill men in the official army calisthenics as set forth by Major Koehler of West Point; it has likewise trained the prospective naval officers enrolled in the naval preparation course at the University in the official Navy calisthenics. These differ decidedly from those of the Army.

In the organization of teachers' training courses for both the fall and summer session, this department has been making special efforts to meet the overwhelming demand for competent teachers in this field. It is also expecting to lend assistance to the Medical School in the development of its prospective plan for the training of reconstruction aides.

Classes have been organized to accommodate faculty men, several of whom have undertaken the work to fit themselves for military service.

Special corrective gymnastics have been conducted for the correction of flat-foot and kindred ailments barring men from the military service. A bulletin on foot hygiene and the correction of flat-foot was compiled for publication by the Military Bureau. This bulletin has been in great demand and has been highly appreciated by various military authorities.

The members of the department are publishing, through the *American Physical Education Review,* a *Manual on War Sports,* for use in high schools and army camps. The department has been asked by the Berkeley Board of Education to make a survey of the Berkeley schools and to recommend proper equipment and methods to meet the double demand of military and physical training.

F. W. Cozens, Instructor in Physical Education, is Instructor in Calisthenics in the School of Military Aeronautics.

The Department of Physical Education for Women is represented on the honor roll by Miss Maude Cleveland, Director of Women's Gymnasium and Assistant Professor of Physical Education, who is serving the government in France.

SCRIPPS INSTITUTION FOR BIOLOGICAL RESEARCH

Kelp Industry

The function of the Institution in the kelp industry is to supply the State Fish and Game Commission information and advice based on scientific inquiry, as to when the different kelp beds shall be declared open and when closed, i.e., when they may and when they may not be harvested, the Commission being empowered by law to make and enforce the regulations.

The requisite information is obtained by general and special inquiry. ''General inquiry'' consists in rather frequent general examinations of the beds to ascertain the state of growth, areal abundance, health, etc., of the plants. ''Special inquiry'' consists in botanical studies on the plants, such problems as their sporulation, embryogeny, bacterial infection, etc., being involved.

The work is in the immediate charge of Mr. W. C. Crandall, Business Agent of Scripps Institution. The botanical investigations are being conducted by Dr. R. P. Brandt.

The somewhat elaborate scheme of dividing the entire kelp area into numbered units and securing a ''gentleman's agreement'' among the harvesting companies as to who shall cut in different places, is largely due to Mr. Crandall. Funds for prosecuting this work are derived from a state imposed tonnage tax on the wet kelp harvested, the proceeds being allotted jointly to the State Game and Fish Commission and the Scripps Institution.

Fishing Industry

Work of the Institution relative to the fishing industry is of several kinds and may be classified according to the agencies by which they are carried on.

1. The Institution in coöperation with the United States Bureau of Fisheries.

During and for some time after the fishing season of 1917, experimental fishing was carried on for the purpose of ascertaining more definitely than the industrial fishing has determined, the area over which tuna, the long finned albacore, may be obtained; where these fishes go when they leave the fishing area in the fall, and other matters involving the distribution and life habits of the fish. The aim of this work was to get information which would enable the fishermen to ply their vocation more effectively and to increase the output.

Also in connection with the Bureau of Fisheries, a report, as exhaustive as possible, is being prepared on the relation of the fishing done in waters under the jurisdiction of the United States and those of Mexican jurisdiction and influence. The aim of this study is to ascertain the relative amounts of fish taken under the two jurisdictions and from the high seas; conditions as to concessions for fishing in Mexican waters, and as to fees and other charges exacted by the Mexican government and Mexicans; and other matters affecting the industry and international questions involved therein.

The Bureau of Fisheries furnishes the money expended directly on these inquiries, the Institution contributing certain facilities, and some labor of its scientific staff and workmen. The scientific director of the Institution has been appointed Director of Operations by the Bureau for its work in this region and Mr. W. C. Crandall, its special agent for certain purposes.

2. The Institution in coöperation with the Bureau of Chemistry and the Federal Food Administration.

The work here consists of experimentation on methods of preserving fish other than canning. Smoking, kippering, dry-salting and brine-salting are being tried, and various species of fish are being utilized, special attention being given to sardines too large for canning.

The Bureau of Chemistry has assigned an expert, Mr. Horace Davi, to this work; the Institution providing laboratory and other facilities and the fresh fish, in part, used in the experiments.

3. In coöperation with the Council of Defense of California.

The problem undertaken in this connection was that of bringing the Institution's programme of research on the plankton as the fundamental food supply of commercial fishes, and on the hydrography of the fishing area as part of the environment of the fishes, into the service of the fishing industry. The aim here has been twofold: the possible increase of productiveness of the industry, and the furnishing of information on which to base regulative and protective measures for the fishing industry. The funds supplied by the Council of Defense for this work during the last year will not be continued next year, but the Institution plans to keep up the investigation in part, at least, on its own account.

4. Mr. Crandall is serving as Fish Administrator for Southern California under the National Food Administration. This responsible position absorbs the major part of Mr. Crandall's time.

SUMMER SESSIONS OF 1918

The two summer sessions of 1918 were war sessions. The following courses will give some idea of the channels of work in which the students were engaged: Automobile Construction, Contemporary Social Problems, Elementary Bacteriology, Elementary Cooking, Essentials of Public Health, Europe since 1815, First Aid, Food and Dietetics, French Civilization, Geography of Europe, General Athletics, Government of Germany and Prussia, History of Germany and Prussia, History of American Diplomatic Relations, Home Care of the Sick, Juvenile Delinquency, Medical and Psychological Problems, Military German, Military Sketching, Navigation and Nautical Astronomy, Plane Trigonometry, Political Development of Modern Russia, Political Institutions of France, Principles and Practice of Vocational Guidance, Problems of Individual and National Conduct, Radio Telegraphy.

Five definite schools occupied twelve weeks of intensive war training: (1) School for the Training of Reconstruction Aides, (2) School for Nursing, (3) School of Social Economics, (4) School for Stenographers, (5) School for Laboratory Technicians.

During both sessions a number of speakers representing various nations of the Allies and patriotic organizations, addressed the students and the general public on war topics.

For the first time in the history of the University a summer session was held in Los Angeles from June 24 to August 3. The reports of attendance indicated that the experiment was a decided success.

At Berkeley the attendance of 3417 far exceeded the most sanguine anticipations. The total number of 4016 students registered at Los Angeles and at Berkeley was greater than any previous summer session enrollment in the history of the University. The popularity of the session was due, no doubt, to the predominance of war courses and to the feeling of the students that preparation for personal efficiency was preparation for national service.

STUDENT PARTICIPATION IN WAR ACTIVITIES

The National Service Committee, an organization consisting of seven students appointed by the President of the Associated Students of the University of California, raised $40,000 on the campus, this to be divided among the various war and civilian charities. During the Second Liberty Loan campaign, bonds to the extent of $73,000 were sold. During the next campaign, the committee disposed of approximately $60,000 worth of bonds.

The University of California Auxiliary to the Berkeley Chapter of the American Red Cross maintains work rooms in Hearst Hall which are open every afternoon. During the year 1917–1918 the women of the University completed more than 15,000 surgical dressings, 700 hospital garments, 2000 knitted articles, 425 Christmas packages, 200 pounds of trench candles, and have equipped and sent out four emergency kits.

More than two thousand dollars' worth of thrift stamps have been sold, thousands of copies of the *Daily Californian* have been sent to the University's soldiers in France, and the Red Cross has been aided from time to time by donations of clothes, shoes, and money from the sale of paper.

WILMERDING SCHOOL OF INDUSTRIAL ARTS

Two hundred and thirty graduates of the Wilmerding School of Industrial Arts are now in active service. Due to their mechanical training, many of them have been assigned to the signal corps, the aviation service, the auto-truck service and other branches where such training is needed.

The active students are organized as a branch of the Junior Red Cross. A fund of one thousand dollars has been raised with which to manufacture hospital equipment needed for various camp activities. The shop students are also at work trying to solve an important problem for one of the military hospitals, namely, to keep food warm while in transit from the general kitchen to twenty-four different wards, and while being served to the individual patients.

A ten weeks course in First Aid was well attended by both boys and girls. The students have bought upwards of a thousand dollars' worth of thrift stamps, and several class organizations have bought liberty bonds. Many of the boys are in the Boys' Working Reserve and have aided the farmers throughout the state during the summer vacations.

B. O. Weeks '16 went down with the Tuscania, and C. V. LeGal '17 died in France.

Mr. F. M. Williams, teacher in science, has enlisted in the service, and Mr. A. Hood, foreman in the electrical shop, reported for duty on June 1, 1918.

Geo. A. Merrill, Director of the Wilmerding School, has been a member of the San Mateo County Draft Board since July 1, 1917, serving as secretary of the board from July 1 to December 31, 1917, and as president since that time.

DEPARTMENT OF ZOOLOGY

The principal work of the Department of Zoology has been its active efforts to eradicate the hookworm from certain infested districts in California. Besides personal visits to those districts, the staff has outfitted a room in East Hall for rapidly making examinations to detect the presence of the hookworm and other intestinal parasites. The results thus far have been encouraging and give grounds for the hope that the hookworm infection may be completely eradicated from the state.

Dr. C. A. Kofoid, Professor of Zoology and Assistant Director of the Scripps Institution of Biological Research, and Dr. S. J. Holmes, Professor of Zoology, are members of the Committee of Zoological Research of the State Council of Defense. The former, in collaboration with Dr. B. L. Clark, Instructor in the Department of Palaeontology, has devoted considerable time to the study of mussel poisoning in California. Dr. Kofoid is a Major in the Sanitary Corps, and W. A. Boeck, graduate student, is Assistant in the Sanitary Corps.

Dr. H. C. Bryant, Economic Ornithologist, California Museum of Vertebrate Geology, is a member of the Subcommittee of Zoological Investigations of the Pacific Coast Research Conference.

A. L. Barrows, Instructor in Zoology, is First Lieutenant, O. R. C., Machine Gun Battalion.

PERSONAL SERVICES OF MEMBERS OF THE FACULTY

Department of Anthropology

Mr. W. C. McKern, Research Fellow in the Department of Anthropology, has enlisted in the Army. Other members of the staff have been prominent in Red Cross and Liberty Loan drives.

School of Architecture

The School of Architecture has been of material aid to the School of Military Aeronautics in contributing the use of its rooms for the making of important maps. One member of the staff is in the artillery, while the course in naval engineering has claimed a number of architecture students. Three of the women students are in service at Mare Island, and a fourth one is assisting the Extension Division of the University of California in courses on Naval Construction.

Department of Drawing and Art

P. W. Nahl, Instructor in Freehand Drawing and Art Anatomy, has made a large map used for observation purposes in the School of Aeronautics. Courses in drafting have been designed to aid art students who enter branches of the service requiring this technical knowledge.

Herman Kower, Associate Professor of Drawing, is a member of the Pacific Coast Research Conference.

Department of Education

C. E. Rugh, Professor of Education, is chairman of the State Committee in charge of the ''Go-to-College'' campaign instituted by the Committee on Education and Special Training, War Department, Washington, D. C., and endorsed by President Wilson and Secretary Franklin K. Lane.

W. W. Kemp, Professor of School Administration, for the past year has been a member of the Children's Committee of the Associated Charities of San Francisco, which committee has devoted itself almost entirely to the problem of juvenile moral delinquents as a menace to the military cantonments in California. He has also been a member of a joint committee selected from this and other civic agencies in the state which assembled and placed before the Governor and the State Board of Control data concerning the above problem. During May and June he was assistant in the Military Bureau.

Department of English

C. M. Gayley, Professor of the English Language and Literature, and Dean of the Faculties, is in the service of the Liberty Loan Committee of the Twelfth Federal Reserve District, the Pacific Division of the American Red Cross, the Y. M. C. A., the State Council of Defense, and other patriotic organizations. He has delivered many addresses and has written numerous articles in support of the cause of the United States and the Allies.

W. M. Hart, Associate Professor of English Philology, as Dean of the 1918 Summer Sessions, has organized the courses of instruction with a view to their practical bearing upon immediate war service and the problems issuing from the war. He is serving as one of the Four Minute Men.

B. P. Kurtz, Associate Professor of English, has spoken during the Red Cross and War Savings Stamp drives and has delivered war speeches in several of the high schools of the state.

T. F. Sanford, Assistant Professor of English Literature, has aided the Red Cross in San Francisco.

G. R. MacMinn, Instructor in English, has assisted in the Military Bureau; under the direction of this bureau H. E. Cory, Assistant Professor of English, and A. G. Brodeur, Instructor in English Philology, have written a number of articles on subjects connected with the war.

H. L. Bruce, Assistant Professor of English Composition during the summer of 1918, was temporarily employed in one of the government's shipyards.

Leonard Bacon, Instructor in English, is Lieutenant in the American Air Service, at San Diego; R. H. Clark and R. G. Ham, instructors in English, have entered the military service; and Guy Montgomery, Instructor in English, has taken part in the activities of the Four Minute Men.

Department of Geography

The Department of Geography gave part of the instruction in the courses preparatory for naval service offered during the University year 1917–18. The course in Oceanography and Marine Meteorology was conducted by R. S. Holway, Associate Professor of Physical Georgraphy, and B. M. Varney, Instructor in Geography.

The School of Military Aeronautics has made use of the department's laboratory for the construction of a model in relief of a portion of Belgium.

Department of German

C. H. Bell, Instructor in German, has been commissioned Captain in the Quartermaster's Division of the United States Reserves and is on duty in the military postoffice at Hoboken, New Jersey. H. K. Schilling, Professor of the German Language and Literature, Franklyn Schneider, Instructor in German, and L. M. Price, Instructor in German, have volunteered their services for war work, and more recently have responded to a call from the Office of Naval Intelligence, of the Navy Department, for ''linguists who speak and write German fluently.'' At this writing, however, they have not been given the opportunity to do actual service.

Department of Greek

The activities of the Department of Greek have necessarily been confined to the personal endeavors of its staff. J. T. Allen, Associate Professor of Greek, is associate member of the Berkeley Board of Legal Advisors, while G. M. Calhoun, Assistant Professor of Greek, has been Assistant Manager of the Military Bureau.

Department of History

The Department of History has given a number of courses bearing directly on the events that led to the present war. H. Morse Stephens, Sather Professor of History, lectured during the spring term of 1918 on the History of Europe since 1815. This course was duplicated in the 1918 Summer Session.

Herbert E. Bolton, Professor of American History and Curator of Bancroft Library; C. E. Chapman, Assistant Professor of Latin-American and California History, and K. C. Leebrick, Assistant Professor of History, have all aided in Red Cross and Liberty Loan drives, and are official Four Minute Men. Professor Leebrick is at present in charge of the War Aims course in the School of Vocational Training. Professor Bolton is a member of the board of editors of the *California War Bulletin* published under the supervision of the State Council of Defense. R. F. Scholz, Assistant Professor of Ancient History, has been assistant in the Military Bureau.

The following present or former members of the department are in active service: F. W. Rübke, Assistant in History, Officers' Training Corps, Camp Lewis; E. R. Brite, former secretary of the department, Regimental Sergeant Major, A. E. E.; D. V. H. Stearns, former secretary, Corporal, Depot Brigade, Camp Lewis; C. G. Davidson, Assistant in History, First Lieutenant, Canadian Army, received the Military Medal; he was severely wounded in combat but recovered; Keith Vosburg, Assistant in History, First

Lieutenant, A. F. S., A. E. F., received the *Croix de Guerre* March 2, 1918, for bravery under fire; T. B. Kittredge, Assistant in History, Lieutenant (Senior Grade), Navy; J. M. Scammell, Assistant in History, Captain, A. E. F.; J. G. Iliff, Assistant in History, with the Y. M. C. A. in France; E. G. Sewell, former secretary, First Lieutenant, A. E. F.

Department of Irrigation

During the current year the Department of Irrigation has given valuable information and advice to those writing to the University for assistance in the development and use of water for irrigation. Owing to war conditions there has been an added amount of correspondence, to which the department has gladly responded.

Department of Jurisprudence

A. T. Wright, Professor of Law, offered a course in Military Law covering such topics as martial law, court-martial, the rule of land warfare and other subjects likely to be of importance to those who are brought into relation with the military forces of the United States. He also gave a series of lectures in Military Law to the students enrolled in the various ordnance schools held on the campus. In addition, Professor Wright was Assistant Counsel to the United States Shipping Board and the United States Shipping Board Emergency Fleet Corporation.

A. M. Kidd, Professor of Law, is assistant in the Military Bureau, and is prominent in Red Cross work.

Mr. M. W. Dobrzensky, Lecturer in Commercial Law, entered the Fourth Officers' Training Camp, securing a Second Lieutenant's commission.

J. U. Calkins, Lecturer in Commercial Law, is First Lieutenant, O. R. C.

C. H. Lindley, Honorary Professor of the Law of Mines and Water, is Assistant to Herbert Hoover.

H. H. Phleger, Lecturer in Law, is Ensign, U. S. N.

Department of Latin

The war work of the Department of Latin has consisted in the personal services of its members. L. J. Richardson, Associate Professor of Latin, is Manager of the Military Bureau; Clifton Price, Assistant Professor of Latin, is assistant in the same office; O. M. Washburn, Assistant Professor of Classical Archaeology, and member of the Pacific Research Conference, also has been a great aid in the Bureau; M. E. Deutsch, Assistant Professor of Latin, was Registrar on Draft Registration Day; and W. A. Merrill, Professor of Latin Language and Literature, was Chief Registrar on Draft Registration Day.

Department of Mathematics

The Department of Mathematics has aided virtually every new ''service'' school which has been in any way connected with the University. B. M. Woods, Assistant Professor of Theoretical Mechanics, has devoted all his time to the School of Military Aeronautics; T. M. Putnam, Associate Professor of Mathematics, has directed the courses in naval preparation; M. W. Haskell, Professor of Mathematics, has given a special course in trigonometry to fifty-eight students in the Navigation School; Dr. Williams, lecturer in 1917–18, was given charge of one of the government schools in navigation. In addition, Thomas Buck, Assistant Professor in Mathematics, during the second half-year, served as secretary of the Committee on Research of the State Council of Defense. He has since been commissioned First Lieutenant in the Ordnance Corps. Dr. Barter, teaching fellow in 1917–18, is serving in the British army, Dr. Taylor has entered the Naval Aviation School at the Massachusetts Institute of Technology, and C. A. Noble, Associate Professor of Mathematics and Professor Haskell, are associate members of the Legal Advisory Board of Alameda County. D. N. Lehmer, Associate Professor of Mathematics, is a member of the Pacific Coast Research Conference.

Department of Philosophy

G. M. Stratton, Professor of Psychology, is Captain in the Air Service; A. U. Pope, Assistant Professor of Philosophy, has been engaged in government research work at Washington, D. C., and C. I. Lewis, Assistant Professor of Philosophy, is with the Artillery at Fort Scott, San Francisco.

Warner Brown, Assistant Professor of Psychology, is a member of the Subcommittee on Psychological Investigations of the Pacific Coast Research Conference.

Department of Political Science

Studies of European and world politics occupied a large portion of the Political Science courses. Problems of Reconstruction after the War, was given by William MacDonald, Lecturer in Political Science. The governments of France, England, and Germany were analyzed in courses given by Ludwik Ehrlich, Lecturer in Political Science. Edward Elliot, Professor of International Law and Politics, instructed two classes in International Law, one of these being a seminar in the most important issues which have arisen since August 1, 1914. During the year ten public lectures on topics bearing directly on the war were given in Wheeler Hall by Professor Elliott, Dr. MacDonald and Dr. Ehrlich. The entire staff gave frequent addresses throughout the state on war subjects, and have contributed liberally to the newspapers and periodicals on questions dealing most intimately with the war.

The following men have entered the service of the government: D. P. Barrows, Professor of Political Science, Major of Cavalry, Intelligence Section, U. S. A.; J. R. Douglas, Instructor in Political Science, Food Administration in Washington; J. R. Thomas, Teaching Fellow in Political Science, American Air Service; M. I. Lavine, Teaching Fellow in Political Science, Navy; M. W. Graham, Teaching Fellow in Political Science, Reconstruction Work in France; T. G. Chamberlain, Teaching Fellow in Political Science, Second Lieutenant, First Anti-Aircraft Battalion; R. M. Dorton, First Lieutenant, National Army.

Dr. MacDonald is a member of the United States Public Service Reserve.

Department of Public Speaking

The Department of Public Speaking has been especially active in furthering the war aims of the national government. Through its head, M. C. Flaherty, Associate Professor of Forensics, it has, in coöperation with the State Council of Defense, contributed its share towards making more efficient the work of the Four Minute Men. Classes were established for the training of these speakers, and for others who were preparing to aid the government in its publicity campaign. Model speeches were drawn up and forwarded to Washington to serve as guides for those engaged in speaking for the Liberty Loan issues. Individual speakers were coached for special occasions.

Under the direction of C. D. von Neumayer, Assistant Professor of Public Speaking, plays were given for the benefit of the Red Cross and Belgian Relief Funds. Other members of the Department of Public Speaking have given readings and recitals before gatherings of enlisted men. Graduate and undergraduate students in the department have toured the state in the interests of food conservation. Three of its teaching staff are now serving the colors.

Newton B. Drury, former instructor, is Second Lieutenant, Balloon Service, stationed at Arcadia, California.

George Boas, Instructor in Public Speaking, is First Lieutenant, A. E. F.

A. H. Hankey, Teaching Fellow in Public Speaking, is Second Lieutenant, A. S. E. R. C., A. E. F.

Department of Romanic Languages

The demand for French and Spanish has greatly increased as a result of the war, and the courses have been so arranged as to provide a speaking knowledge not only of the classical portion of the Romanic languages, but also of the war terms of everyday use.

L. M. Turner, Assistant Professor of French, a Lieutenant at Camp Kearney, is organizing French classes for officers and soldiers, while Gilbert Chinard, Professor of French, has coöperated in the publication of a French war vocabulary of a scientific character.

Alfred Solomon, Instructor in French, is with the Y. M. C. A. in France.

Department of Semitic Languages

Professor M. A. Meyer, Lecturer in Semitic Literature and History, has been active in civilian duty. He is Chairman of the Jewish Welfare Board of the United States Army and Navy, Northern California Branch; Director of the San Francisco Chapter, Red Cross; Vice-Chairman of the Civilian Relief Section, San Francisco Red Cross; committee member of the Syrian and Armenian Relief Fund; member of the British, French, and Belgian Commission for the Blind; and member of the Belgian Relief Commission.

William Popper, Associate Professor of Semitic Languages, has been collecting funds in Berkeley for the Young Men's Hebrew Association.

Department of Slavic Languages

Lieutenant Milutin Krunich, Assistant in Serbo-Croatian, has written an important war book entitled *Serbia Crucified.* The University of California is issuing it as one of its volumes in the Semicentennial Series.

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- The Annual Announcements of the Medical School, the Colleges of Dentistry, Law, and Pharmacy.
- The President's Annual Report.
- The Prospectus of the College of Agriculture.

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